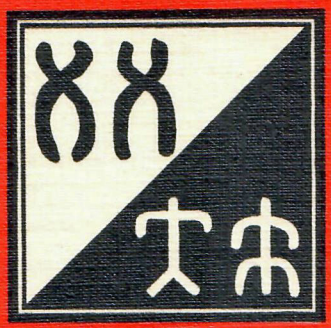
Vitaly Shevoroshkin
(ed.)

Reconstructing Languages and Cultures



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RECONSTRUCTING LANGUAGES AND CULTURES

ABSTRACTS AND MATERIALS FROM THE FIRST INTERNATIONAL INTERDISCIPLINARY SYMPOSIUM ON LANGUAGE AND PREHISTORY ANN ARBOR, 8-12 NOVEMBER, 1988

edited by

Vitaly Shevoroshkin

BPX 20

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BOCHUM PUBLICATIONS IN EVOLUTIONARY CULTURAL SEMIOTICS

EDITORIAL

BPX is a series of monographs or collections of papers (also resulting from pertinent colloquia) that are published at irregular intervals. The series is designed to bring into focus the interaction of nature and culture. Particular emphasis will be given to the overall ideas of **integration** and **focus**. Communicative processes will be considered to be integrated parts of cosmogenesis, biogenesis, psychogenesis etc. The fundamental processes underlying all levels of evolution are assumed to be identical. Not unlike most other sciences, **evolutionary semiotics** is considered to share in an ultimately unitary and indivisible reality. Its specificity is derived solely from its focus on a particular level of evolution: although seemingly obvious, the exact nature of this inevitable bias (human or proto-human predicament) continues to deserve concentrated attention. The prototypical structure for this is considered to be **culture**: a phenomenon whose true integrative potentialities have not yet been fully discovered or explored. For a semiotics thus conceived, structure and process are not different phases of reality and/or sciences but rather mere faces of a unitary field. In the view of this series, then, any fruitful attempt at semiotic analysis will be based on premises of macro-integration - or **evolution** - and of micro-integration - or **culture.**

While it is the ambitious goal of this series to encourage interdisciplinary work on the nature of culture as outlined above, BPX will have to be content - especially in its initial stages - with more modest attempts at elucidating semiogenesis. In addition, most contributions will presumably be relatively specific, covering all possible areas of culture or proto-culture, with the desired unity or homogeneity - regarding aim and scope - largely confined to the background.

Bochum, December 1984 W. A. K.

I am very grateful to the following institutions for their support in making the Symposium on Language and Prehistory possible: National Endowment for the Humanities; International Research and Exchange Board (IREX); USSR Academy of Sciences; Offices of the Vice President for Research and of the Dean for Research, College of Literature, Science and the Arts, and the Department of Slavic Languages and Literatures at the University of Michigan.

I would also like to thank Dean Richard Ford and Professors John Mersereau and Benjamin Stolz for their help in organizing the symposium. Many thanks as well to the secreterial staff and students of the Slavic Department at the University of Michigan who assisted me in various ways during the symposium. I should add that none of this would have been possible without the help of Galina and Nina Mikhailovna Barinova.

I am deeply indebted to Professor Walter Koch of Ruhr-Universitat, Bochum, who was the first to propose that we publish these proceedings. This volume would not have appeared without the support of the Northcote Parkinson Fund. Finally I would like to thank individuals who assisted me in preparing this book: Katherine Rowenchuk, Mark Kaiser, Larry Bogoslaw, Steve Chapdelaine, Keith Livers, Joe Shallert and Alex Eulenberg.

V.S.

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John Bengtson, Minneapolis, Minnesota
Lionel Bender, Southern Illinois University at Carbondale
Henrik Birnbaum, University of California, Los Angeles
Vaclav Blažek, Pribram, Czechoslovakia
Luca Cavalli-Sforza, Stanford School of Medicine
William Croft, University of Michigan, Ann Arbor
Gerard Diffloth, Cornell University
Aron Dolgopolsky, Haifa University
Anna Dybo, Institute of Linguistics, Moscow
Vladimir Dybo, Institute of Slavic and Balkan Studies, Moscow
Joseph Greenberg, Stanford University
Eric de Grolier, UNESCO, Paris
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Vyacheslav Ivanov, Institute of Slavic and Balkan Studies, Moscow
Mark Kaiser, Illinois State University, Normal
Mary Key, University of California, Irvine
Andrei Korolëv, Institute of Linguistics, Moscow
Sydney Lamb, Rice University, Houston
Alexis Manaster-Ramer, IBM Research, Yorktown Heights, N.Y.
Karl Menges, Oriental Institute, Vienna
Alexander Militarëv, Institute of Oriental Studies, Moscow
Oleg Mudrak, Institute of Linguistics, Moscow
Sergei Nikolaev, Institute of Slavic and Balkan Studies, Moscow
Vladimir Orël, Institute of Slavic and Balkan Studies, Moscow
Ilya Peiros, Institute of the Far East, Moscow
Edgar Polomé, University of Texas at Austin
Geoffrey Pope, University of Illinois, Urbana

Ernst Pulgram, University of Michigan, Ann Arbor
Merritt Ruhlen, Palo Alto, California
Viktor Shnirel'man, Institute of Ethnography, Moscow
Vitaly Shevoroshkin, University of Michigan, Ann Arbor
Sergei Starostin, Institute of Oriental Studies, Moscow
Stephen Tyler, Rice University, Houston
Roger Wescott, Drew University, Madison, N.J.

Discussants:

William Baxter, University of Michigan, Ann Arbor
A.L. Becker, University of Michigan, Ann Arbor
Paul Benedict, New York
Allan Bomhard, Boston
J.C. Catford, University of Michigan, Ann Arbor
Madhav Deshpande, University of Michigan, Ann Arbor
Harold Fleming, Boston University
Eric Hamp, University of Chicago
Thomas Markey, Karoma Publishers, Ann Arbor
Calvert Watkins, Harvard University
Gernot Windfuhr, University of Michigan, Ann Arbor

Symposium Co-Directors:

Vitaly Shevoroshkin and **Benjamin Stolz**
Department of Slavic Languages and Literatures
University of Michigan
Ann Arbor, MI 48109-1275, U.S.A.

A SYMPOSIUM ON THE DEEP RECONSTRUCTION OF LANGUAGES AND CULTURES

Vitaly Shevoroshkin

When several years ago I corresponded with American linguists regarding the reconstruction of American Indian proto-languages (such as Penutian or Hokan) they were, as a rule, highly skeptical about such possibilities, to say nothing about reconstructing an "Amerindian" proto-language. When I tried to point out many exact correspondences between stable words in Penutian, or in Hokan, or between Penutian, Hokan, Salishan and other Amerindian languages it always fell on deaf ears. The same thing happened when I underlined the fact that most American Indian languages have the first person pronoun **ni**, and second person **mi** (pronouns of the sort 'I', 'me', 'thou', 'thee' are not borrowed from language to language; they are inherited, and therefore the presence of **ni** 'I' and **mi** 'thou' in many American Indian languages certainly indicates that the languages in question are genetically related - be it only remotely).

Later I understood that this negative attitude was a reaction to some unbridled comparisons and reconstructions of the 1950's and 1960's. These "reconstructions" were apparently made by scholars trained as anthropologists who considered linguistics to be a step-daughter of anthropology. No method whatsoever was used in these works. It was acceptable to compare anything with anything (both semantically and phonetically).

When I tried to indicate that not all remote comparisons and deep reconstructions are that bad, that Illich-Svitych had successfully compared six Eurasian proto-languages in the early 1960's and had brilliantly reconstructed their parent-language - Nostratic - I never got any response. It was difficult for me to grasp the fact that none of my correspondents even knew of Illich- Svitych, not to mention his outstanding discovery.

Western Europe, the cradle of Nostratic theory, has not only lost its leading role in broad comparisons and deep reconstructions, it has actually lost almost everything as far as these notions are concerned. If, very

seldom, some works on deep reconstruction appear, then these works are for the most part clumsy and dishonest attempts to discredit the Nostratic theory. As for America, the interest in broad reconstructions and comparisons is reappearing but, unfortunately, this work is exceedingly weak methodologically. And consequently many linguists do not pay any attention to such attempts.

All this brought me to a clear understanding that a meeting between Soviet scholars and Western scholars (the latter being strong in some relatively narrow fields of historical linguistics but weak in broader comparisons and unfamiliar with deep reconstruction) was a burning necessity.

It is indeed apparent to me that our Symposium on Language and Prehistory demonstrated the following:

1) Nostratic reconstruction, as proposed by both Illich-Svitych and Dolgopolsky in 1964 independently, is a very precise and powerful instrument of comparative-historical linguistics which is important not only because it gives us a language spoken some 14,000 years ago, but also because it can help us solve many otherwise unsolveable questions of historical linguistics.

2) Nostratic reconstruction imposes strict control over some unfounded reconstructions of Nostratic daughter-languages; it helps to determine what is archaic and what is innovative in a certain daughter-language.

3) All six Nostratic daughter-languages (West: Afro-Asiatic, Indo-European, Kartvelian; East: Uralic, Dravidian, Altaic) show even tighter genetic connections than previously demonstrated. For example, Afro-Asiatic reveals the same vocalism as East Nostratic languages (V. Orël and O. Stolbova).

4) At least one more Nostratic language can be added: Eskimo-Aleutian (O. Mudrak). Eskimo-Aleutian belongs to the East Nostratic languages, namely to Altaic. The Altaic proto-language is, indeed, quite "reconstructable." It includes Turkic, Mongolian, Tungus, Korean, Japanese, and Eskaleutian. An excellent book on Altaic was just completed by S. Starostin.

5) Whereas 25 years ago we had only Nostratic, today we have another proto-language of the same time-depth, namely Sino-Caucasian (S. Starostin and S. Nikolaev). The Sino-Caucasian phylum includes North Caucasian, Sino-Tibetan, Yeniseian, and Na-Dene.

6) There are other phyla which have been identified, such as Austric (Austronesian, Miao-Yao, Tai-Kadai, Austo-Asiatic), Amerind (most Amerindian languages, but without Na-Dene and Eskaleutian), and others.

7) Both Nostratic and Sino-Caucasian show a clear genetic relationship. This was demonstrated by Starostin in his systematic comparison of both proto-languages. This is also a strong argument for the mutual genetic relationship of languages. Indeed, both Nostratic and Sino-Caucasian show many parallels with other phyla such as those mentioned above.

8) It is not enough to simply reconstruct proto-languages. It is important to separate inherited words from borrowings, to reveal prehistoric contacts between neighboring proto-languages, to reconstruct proto-languages, based on the data of linguistics, archaeology and genetics. We can already see that recent achievements in these fields corroborate one another.

9) The mutual cooperation of linguists, archaeologists and geneticists, as well as representatives of other fields of research (mathematics, physiology, prehistory, mythology, philosophy, etc.) is slowly emerging. This cooperation makes it possible to penetrate deeper than ever before into our remote past.

Since the symposium there have been some positive developments. First of all, several publishing houses have proposed that we produce a few volumes on the distant relationship of languages and cultures, both scientific and popular. At this moment several translations of Russian papers are in progress or have already been completed. We have also received several articles from both Soviet and American scholars to be included in the forthcoming collections. And finally, invitations have already been extended to several Western scholars to take part in The Second International Conference on Linguistic Reconstruction and Prehistory of the Orient this coming May and June in Moscow.

REMARKS ON THE SYMPOSIUM

Katherine Rowenchuk

Although the First International Symposium on Language and Prehistory was set for the first week of November 1988 since early spring of that year, it wasn't until participants began to arrive from various points of departure that the event appeared to be, indeed, a reality. After numerous trips to the airport to gather those from Czechoslovakia, Hungary, Israel, Austria and the Soviet Union, the atmosphere took on an air of anticipation and subdued exhiliration while at the same time it seemed quite natural that this group of specialists in a field for the most part neglected within the United States and Western Europe should finally come together to present and exchange years of work and original ideas.

On the eve of the symposium Joseph Greenberg, one of the few American linguists working on long-range linguistic comparison as demonstrated by his extensive classifications of African and American Indian languages, gave a lecture entitled "Proto-linguistic variation: a link between historical linguistics and sociolinguistics." Greenberg classifies languages based on the comparison of similarities without establishing sound-correspondences and as such his work differs greatly from that of the Soviet comparativists for whom linguistic reconstruction is pivotal. It was fortunate that both approaches were represented during the course of the symposium although it is now very clear that American and Soviet scholars will have to bridge quite a gap, both philosophically and methodologically, if the two are to cooperate in the future.

On Tuesday evening, November 8th, the delegation of eleven linguists and one archaeologist from the USSR arrived at Detroit Metropolitan Airport. Among those on hand to meet them was Vitaly Shevoroshkin who had last seen those he knew fourteen years earlier, among them his former teacher, Vyacheslav Ivanov, and several of his own former students. It was, in all likelihood, the first time that such a large Soviet delegation had come to the US to take part in a linguistic conference of any type. For most it was the first time they had travelled abroad or to the West yet it was hardly apparent that the twelve hour flight had taken them through Newfoundland, New York and eight time zones.

In the lobby of the Ann Arbor Inn they met Aron Dolgopolsky who embraced them two and three at a time. Although some of them were too young to have known the co-reconstructionist of Nostratic before he left Moscow eleven years earlier it was clearly an emotional reunion. Later that evening when these members of the Moscow School, reunited, and several other conference participants met up at a local pub, Eugene Helimsky remarked how some of them used to meet with Professors Dolgopolsky and Shevoroshkin in Moscow, adding "Who would have thought that we would all be together again - in Ann Arbor?"

This reunion was particularly beyond expectations for Shevoroshkin who started seeking support for long-range linguistic comparison soon after his arrival in the United States in 1974. Even one year before the symposium there seemed to be no interest on the part of US linguistic institutions in reaching back beyond Indo-European. The fact that research in the field had been going on for more than 25 years in the USSR provoked little or no response until the past year.

Despite apparent apathy and a clear lack of support, preparations for the symposium had begun almost a year earlier in Moscow where Shevoroshkin's wife, Galya Barinova, established contacts with linguists in the Academy of Sciences. After her departure, Barinova and Shevoroshkin continued making plans with the help of Barinova's mother who relayed messages between Moscow and Ann Arbor. By early spring a grant proposal submitted to the National Endowment for the Humanities in September 1987 by Shevoroshkin and Benjamin Stolz of the Slavic Department at the University of Michigan was accepted, and thereafter final preparations began in Ann Arbor for the First International Interdisciplinary Symposium on Language and Prehistory.

Even as the symposium was several days under way enthusiasm from all sides didn't diminish but rather gained momentum. In addition to participants' papers, most of which are summarized in the present volume, discussions during coffee breaks and at nightly receptions gave those in attendance a chance to become better acquainted with each other's work. The Thursday evening session, open to the public and culminating in a late-night gathering, gave "outsiders" a look at the work of that evening's speakers - Menges, Ivanov, Dolgopolsky and V. Dybo - together with their recollections of V. M. Illich-Svitych. A final reception at the home of

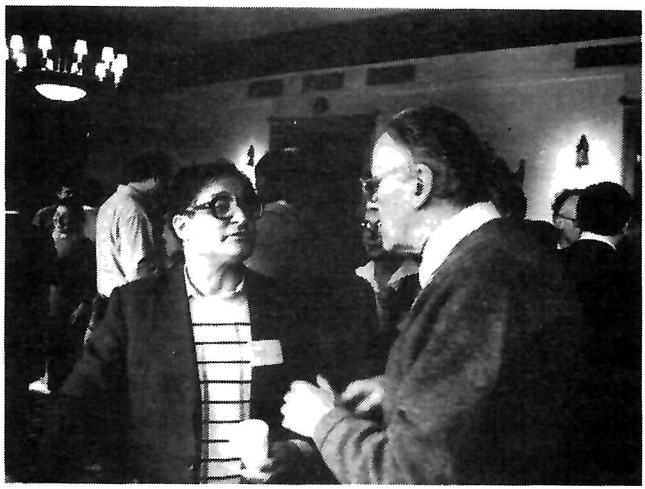
Professor J. C. Catford on Saturday afternoon ended the symposium on a pleasant note with promises for future meetings both here and in Moscow.

Establishing contacts and exchanging views and information related to language and human prehistory made the symposium a successful and worthwhile event, an opinion expressed in many letters from participants within the US and abroad. The fact that it was so reluctantly received in linguistic circles and that, to this day, communication between Ann Arbor and Moscow is initiated primarily from the Department of Slavic attests to the need for a more open-minded approach since, indeed, cross-cultural understanding is essential to the field of linguistics itself.

Ann Arbor, January 1989

From left: Benjamin Stolz, Sergei Starostin, Vyacheslav Ivanov, Vitaly Shevoroshkin and Eugene Helimsky.

A panel discussion at the Center for Russian and East European Studies. From left: V. Ivanov, B. Stolz, S. Starostin and E. Helimsky.



Aron Dolgopolsky, left, speaking with J.C Catford

ILLIČ-SVITYČ: A BIOGRAPHICAL SKETCH

Rimma Bulatova

Vladislav Markovič Illič-Svityč was born on September 12, 1934 in Kiev. In 1957 he graduated from Moscow State University with a major in Slavistics. From 1957 through 1966 he worked in the Institute for Slavic Studies of the Soviet Academy of Sciences. In 1963 he successfully defended his doctoral candidate dissertation, entitled "Nominal Accentuation in Baltic and Slavic. The Fate of the Accentual Paradigms." The dissertation was published in Moscow in 1963 (179 pp.). Illič-Svityč died tragically on August 22, 1966.

Before occupying himself with problems in the area of remotely cognate languages, Illič-Svityč was the author of a series of articles in Slavic, Balto-Slavic and Indo-European linguistics[1], as well as the relatively small, but highly significant book "Imennaja akcentuacija v baltijskom i slavjanskom" (Moscow, 1963) (translated into English as "Nominal Accentuation in Baltic and Slavic", MIT Press, 1979). In this book we can already discern the characteristic traits of the 29-year old Illič-Svityč's talent for research: scientific boldness, consistency of purpose, "an astonishingly rapid associative ability", consummate mastery of data, and a skill for far-reaching analysis of the material[2]. A constant throughout V.M. Illič-Svityč's scholarly life was his interest in problems related to Indo-European root structure[3], an interest which grew out of his dissatisfaction with the state of Indo-European reconstruction. A tendency in Indo-European linguistics to construct equally probable and

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[1] For a list of Illič-Svityč's published works up to 1966, see V.A. Dybo's article "Pamjati V.M. Illič-Svityča," in Sovetskoe slavjanovedenie 1967, 1:76-77.

[2] V.A. Dybo. "Pamjati V.M. Illič-Svityča", p. 72.

[3] See Illič-Svityč's articles in Voprosy jazykoznanija 1959, 2; 1961, 4; Voprosy slavjanskogo jazykoznanija vol. 5, Moscow, 1961, etc.

arbitrary proto-systems was attributed by Illič-Svityč to an over-estimation of the possibilites of the method of internal reconstruction, when applied without strict control by external comparison.

This conclusion in fact led Illič-Svityč to the inevitability of moving beyond the bounds of one language family and to the necessity of comparing a set of language families.

To the solution of this problem Illič-Svityč brought to bear a superb mastery of all the tools of comparative-historical analysis and successful experience in the fields of comparative historical phonology and accentology. In the course of just a few years he not only assimilated and critically evaluated the available material on five large language families (not including Indo-European), but also produced an important series of works on the Altaic, Uralic, Kartvelian, and Hamito-Semitic languages, filling in gaps in the comparative grammars of these language groups.

Examples of Illič-Svityč's timely and innovative work were his articles on the Altaic dentals (* *t*, * *d*, *δ) and velars (* *k'*, * *k*, * *g*)[4]. In the first of these works he gave a detailed proof of the existence of Proto-Turkic initial * *d* and *δ, disproving the established viewpoint in Turkology, according to which only the voiceless dental * *t* was possible in Turkic in initial position. It was he who proved the triadic system of initial stops in Altaic, thereby determining the Proto-Altaic system of stops. It was also he who proposed the Proto-Altaic status of a long vowel series.

The well-known Kartvelianist, G.A. Klimov, author of an etymological dictionary of the Kartvelian languages (of which Illič-Svityč was the editor), observed that Illič-Svityč came to Kartvelian studies at a crucial period in Kartvelian comparative-historical grammar, when the canons of traditional Kartvelian linguistics were beginning to be reevaluated as a result of the application of new methods of research and an expansion of the basis of comparison, the latter principally due to the inclusion of data from Svan. Traditional Kartvelian linguistics had not admitted the possibility of an initial kinship between Kartvelian and Indo-European

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[4] See Voprosy jazykoznanija 1963, 6; Ètimologija .1964, Moscow, Nauka, 1965.

languages. Against this background, Illič-Svityč's studies, guided as they were by the idea that it was necessary to seek for external comparisons between Kartvelian and Nostratic languages, struck a new note. Illič-Svityč proposed new solutions in the determination of the Proto-Kartvelian root structure, making a contribution to working out the problem of Proto-Kartvelian ablaut. He was the first in Kartvelian studies to draw attention to prothetic consonants in Svan. Illič-Svityč provided a reliable reconstruction of Proto-Kartvelian prototypes, a by-product of which was the appearance of a set of new Kartvelian etymologies, as well as the refinement of existing ones. Mastery of the Semitic material allowed him to adduce additional evidence for ancient contacts between the Kartvelian and Semitic language families. Illič-Svityč's work in Kartvelian comparative-historical grammar went beyond the limits of Kartvelian into the area of Caucasian languages in general and still further. This work presupposes an initial cognate relationship between Kartvelian and Indo-European[5].

Illič-Svityč's significant contributions to Indo-European linguistics include his proof of the complementary distribution of the Indo-European velars with respect to Nostratic vocalism[6]. In a work dedicated to Indo-European-Semitic language contacts Illič-Svityč not only identified a stratum of ancient borrowings from Semitic into Indo-European, thereby delimiting the domain of possible genetic comparisons between these two language groups, but also proposed new data for solving the question of the Indo-European homeland.

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5 See Illič-Svityč's review of T.V. Gamkrelidze's and G.A. Mačavariani's book in Voprosy jazykoznanija 1966, 4, as well as his article "Caucasica" in Etimologija. Principy reconstrukcii i metodika issledovanija, Moscow, 1965.

6 V.M. Illič-Svityč. "Genezis indoevropejskix rjadov guttural'nyx v svete dannyx vnešnego sravnenija" in Problemy sravnitel'noj grammatiki indoevropejskix jazykov. Tezisy dokladov, Moscow, 1964.

Illič-Svityč strengthened and refined the reconstruction of Uralic vocalism in the light of external comparative data[7].

The crowning achievement of his scholarly career was to be the attempt at genetic comparison of remote language groups, which resulted in the compilation of a comparative-historical grammar of the six major language groups of the Old World: Indo-European, Hamito-Semitic, Kartvelian, Uralic, Dravidian, and Altaic. Illič-Svityč managed to publish his "Materialy k sravnitel'nomu slovarju nostratičeskix jazykov"[8] ("Materials For a Comparative Dictionary of the Nostratic Languages"), which includes a dictionary of 600 Nostratic roots, alphabetically organized according to the reconstructed proto-forms and documented in the daughter languages and their proto-languages.

Illič-Svityč worked with great speed, as if seeking to accomplish as much as possible in the small time alloted him to live. He intended to include in the etymological dictionary all the roots he had identified, and agonized over the solution to the problem of how to compress all 600 of these (in his data files there are more) into the one volume of approximately 500 pages which had been granted him in the work plan of the Institute for Slavic Studies. In writing up the etymologies he tried to take into account their alphabetical order, in order to ensure full publication of the complex text. Thanks to this, the first-published part of the dictionary (*b-* *ḱ*) represents an integral whole, rather than disparate etymologies.

Slava, as Vladislav Markovič was known to his friends and colleagues, perished at the height of his work on the Nostratic dictionary, at a time of supreme concentration and mobilization of all his strength and powerful intellect. He was completely engulfed in the project, which occupied all his waking hours. Thus, on that fateful Sunday, the 21st of August, 1966, in the town of Zagorjanskaja near Moscow (where he had rented a room with his wife and son in a decrepit little wooden house), as he was walking

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7 See Tezisy dokladov na Vsesojuznoj konferencii finno-ugrovedov v Iževske, Iževsk, 1967.

8 See Ètimologija. 1965. Moscow, Nauka, 1967.

home with a can of kerosene, lost in his thoughts, he started across the road before verifying the flow of traffic. The inexperienced driver of the oncoming vehicle was unable to avoid a collision. Vladislav Markovič's injuries were severe, including a fractured skull. A local hospital outside of Moscow, especially on a Sunday, was unable to provide the appropriate neurosurgical aid, and on August 22nd Vladislav Markovič was no more.

He left behind him the first 24 typewritten pages of the etymological dictionary, 288 etymological entries in final handwritten copy, rough drafts of an additional 65 etymologies, and initial entries for the letters *р-ѯ*. In addition there were numerous card files of materials and bibliographies, folders, and envelopes containing various materials. It is difficult to believe that all of this could fit into a small room which served not only as a study, but also as a bedroom and dining room.

Slava's work was marked by the most scrupulous exactitude and order, which entered into all aspects of his research. We, for example, were struck by the fact that the Introduction to his etymological dictionary, which was written by hand and contained many hundreds of bibliographical references, proved when checked to contain not a single mistake or inexactitude (in the text itself there was only one misprint). Consequently it was possible for a person with no previous expertise in the field, such as myself, to orient themselves in his materials without difficulty.

Illič-Svityč, Dybo, and I were friends for many years; none of us were Muscovites and therefore we did not live in Moscow itself. We worked together (I from 1956, Slava from 1957, Dybo from 1958) in the Institute for Slavic Studies (Academy of Sciences, USSR) in the Slavic Linguistics sector, headed by Professor Samuil Borisovič Bernštejn, well known for his remarkable ability to attract talented linguists, including O.N. Trubačëv, S.K. Šaumjan, A.A. Zaliznjak, N.I. Tolstoj, V.N. Toporov. Slava was Bernštejn's favorite pupil. He was in fact loved and deeply respected by all his colleagues not only for his immense talent and hard work, but also for his humanity, spiritual generosity, patience, commitment to principles, and self-effacing modesty. He was a true friend: although he himself lived in a small rented room, he touchingly and effectively concerned himself

with Dybo, who found himself without work upon the completion of his graduate studies and was forced at times to spend the night at the train station. It was Slava who brought Dybo to the Institute and persuaded Bernštejn to give him a position. At the same time, Slava was close to very few people, opening up to almost no one. He had a fine sense of humor and of self-irony. He wrote poetry and drew well.

After Slava's death no one (not even S.B. Bernštejn) believed that it was realistically possible to bring his work to publication without the author and the help of specialists. The horrible sense of loss had literally devasted Dybo and myself. All that guided us in our blind grief was the insuperable need to do something for Slava, to atone for the sense of guilt we felt toward him: for the fact that we had not been with him in his final awful hours, nor done anything to save him (I was on vacation with my children in the south, while Dybo was at home in a small town outside Moscow, also without any knowledge of what had happened).

I studied the card files, papers, drew up an inventory, had the ready etymologies typed, and then proofread them. Dybo immersed himself in the material: unravelling changes in Illič-Svityč's texts, which resulted from the author's discovery of new solutions to many fundamental problems in Nostratic comparative historical phonology.

A crucial problem, which required a good deal of painstaking work, was the composition of tables of phonetic correspondences, which would serve as a key to the entire contents of the dictionary. Illič-Svityč had not had time to make these tables. It was a sight to behold as Dybo (whose scholarly interests were purportedly limited to Indo-European and Slavic accentology, but which actually extended far beyond) would be alternately elated by his success in following Illič-Svityč's steps, then fall into dark despair when he was unable to make the necessary connections. With his enormous scholarly potential, V.A. Dybo was severely tried by the effort required to enter into the volume of material bequeathed by Illič-Svityč. While comparing the materials of Illič-Svityč's preliminary publications with the text of the prepared dictionary, Dybo discovered a number of divergent readings reflecting changes in the reconstructions of vowel and consonant systems, which were inevitably made by his colleague in the

light of advances in his research. Dybo grouped these changes and gave an analysis of them in the introductory "Editor's Preface" (vol. I, pp. III-XXXIV). These changes concerned the introduction of a Nostratic γ, a more precise statement of the reflexes of Nostratic γ, reconstruction of the laryngeal ?, etc. Complete familiarity with the material compiled and developed by Illič-Svityč, and its direct comparison with original sources, which was carried out by Dybo and his volunteer assistants, gave Vladimir Antonovič grounds for emphatically affirming the proto-language status of the reconstructed proto-system (vol. I, p. XXXV). With his methodically rigorous and materially rich investigation, Illič-Svityč had convinced as formidable and demanding an opponent as Dybo. From this time forth, Dybo became a firm adherent of the Nostratic hypothesis, and continued to pursue developments in the field of remote kinship between language families. In fact it is Dybo, editor-in-chief of Illič-Svityč's work, who has led Nostratic studies from being a one-man field into the area of collective research.

At the Institute of Linguistics (Academy of Sciences, USSR) there worked a scholar named A.B. Dolgopolsky, who shared Illič-Svityč's interests, but with whom Vladislav Markovič maintained contact reluctantly. Impulsive, hasty and careless, Aron somehow did not favorably impress the thorough and taciturn Illič-Svityč. I was once witness to a conversation of theirs on the balcony of the Lenin Library in Moscow. Aron pounced upon Illič-Svityč, asking numerous questions, which Slava answered almost through his teeth. When the conversation had ended, Slava sighed with relief, and said: "I'm afraid to tell him anything more than I have to; otherwise he'll publish it tomorrow without checking it". In fact just such a thing had recently occurred. Dolgopolsky, who had taken up Nostratic studies long before Illič-Svityč, had come to the conclusion that immediate comparison was insufficient to solve the question of genetic kinship within the Nostratic languages. He placed great hopes in a mathematical method of analysis which would confirm the theoretical probability of non-trivial coincidences. The results of his investigation in this direction were offered in the article "The Hypothesis of the Ancient Kinship of Language Families of Northern Eurasia from the Point

of View of Probability" (in Voprosy Jazykoznanija, 1964, 2). But an acquaintance with the preliminary results achieved by Illič-Svityč, and with his position on the given question, compelled Dolgopolsky to take a more optimistic stance regarding the possibility of deriving a system of regular correspondences between Nostratic languages by means of immediate comparison of the roots of the proto-languages of the respective daughter families. By the time of the 7th International Congress of Ethnography in 1964, Dolgopolsky had prepared a paper titled "A Hypothesis Regarding the Ancient Kinship of the Languages of Northern Eurasia (The Problem of Phonetic Correspondences)", a preliminary version of which he had shown to Illič-Svityč. The latter had made many additions and corrections. Aron took all of these into full account, but omitted to indicate their author.

Therefore, when the question arose as to including Dolgopolsky in the work on Illič-Svityč's manuscript (since it was apparent that his knowledge would be of help), the idea was opposed by almost all members of the sector, including myself, remembering as I did Slava's reaction to Dolgopolsky. But I was eventually persuaded otherwise, the decisive role being played by the opinion of Vladimir Nikolaevič Toporov, who always seemed to be the embodiment of higher wisdom. It must be admitted that the general situation surrounding Slava's scholarly legacy was beginning to wear on all of us. There were even demands made to remove me from the enterprise. But with time everything settled down; and those who wanted to work on Slava's book began to work reguarly and according to a general plan.

When Aron Dolgopolsky, surrounded by a crowd of pupils, appeared at our Institute, there was some tension at first, as we got used to one another. I was afraid, that Aron, while passionately declaiming something to his entourage, might at any moment plunder Illič-Svityč's card files. Later, however, when our worksite was situated temporarily in Aron's apartment, I was astonished at how, in the midst of the chaos which always reigned in his study, he was always able to infallibly locate the necessary piece of paper or book in the heaps of materials which lay piled in the corners of the room.

In the course of time we developed a mutually satisfactory collaborative procedure, thanks to the unflappable Dybo, and became more productive: Dybo and Dolgopolsky worked through the materials, constantly checking and discussing them, while it remained for me to keep the whole house in order, as well as to serve as chief dispatcher, passing on and receiving materials. In time Aron, Dybo and I became friends. Aron proved to be a person capable of great self-sacrifice, a selfless worker, ready to perform any amount of labor in the interests of science.

And so, the ideas (and first attempts) at studying remote kinship among known languages, which began with H. Pedersen, B. Collinder, K. Menges, J. Angere, F. Köppen, et al., and in our country with A.B. Dolgopolsky, were now firmly grounded in reality. But "the first decisive success in the field of Nostratic linguistics was due to V.M. Illič-Svityč, who in 1964 in a brief set of proposals entitled "The genesis of the Indo-European series of velars in the light of external-comparativist data" (5 pp.) brilliantly solved one of the fundamental problems of Indo-European consonantism, with the aid of Uralic and Altaic correspondences"...Acknowledgement of the exceptional character of this short article was not slow in coming from the veteran of Indo-European-Uralic comparative studies, B. Collinder, who wrote in a work appearing in 1965: "Illič-Svityč's research marks a decisive success in the field of Indo-European-Ural-Altaic linguistic comparison...Some may object that the number of reliable etymological comparisons is insufficient to assure full demonstrative proof. But in answer to the sceptics we may with Orestes exclaim: "I advise you; don't love the sun and stars too much; descend with me into the misty kingdom".[9]

A Nostratic quatrain was found among Slava's papers after the title page of the grammatical portion of his manuscript. V.A. Dybo believes that it was clearly intended in its first variant as an epigraph. "That the text was intended for such a purpose was consistent with our common response to analogous efforts by Schleicher and Hirt, which we then considered, as I

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[9] Konferencija po sravnitel'no-istoričeskoj grammatike indoevropejskix jazykov (12-14 dekabrja). Predvaritel'nye materialy Moscow, 1972, p. 4.

still do, not mere methodological errors or even absurdities, but quite successful attempts to give synthetic and laconic expression to the results achieved at a certain point in time in the reconstruction of the proto-language" (V.A. Dybo). We have adopted these Nostratic verses as the epigraph to the first volume of the Dictionary, just as they are a fitting epigraph to his scholarly life as a whole. (These lines are also inscribed on Slava's tombstone).

***ḳelHä weţei ʕaḳun kähla
ḳaλai palhʌ - ḳʌ na wetä
śa da ʔa-kʌ ʔeja ʔälä
ja-ḳo pele ţuba wete

Language is a ford across the river of Time,
It leads us to the dwelling place of those who are gone;
But he will not be able to come to this place
Who fears deep water.

Among Slava's papers I came upon an index card with a sketch-map of the homelands of the compared language groups. After careful examination of several versions, this map was included in volume one (p. 45).

The first volume of "Opyt sravnenija nostratičeskix jazykov (semitoxamitskij, kartvel'skij, indoevropejskij, ural'skij, dravidijskij, altajskij)" ["A Comparison of the Nostratic Languages (Hamito-Semitic, Kartvelian, Indo-European, Uralic, Dravidian, Altaic)"] included an introduction, sections "On the history of research into connections between Nostratic language groups" and "Surveys of Works on the Comparative Grammar of the Various Language Families", a bibliography, lists of abbreviations, tables of phonetic correspondences at various levels (from Nostratic to the compared language groups), and the beginning of the dictionary itself (from *ƀ* through *ḳ*, with 245 etymologies all told).

It had seemed to us that the most difficult part would be the preparation of the dictionary for publication; after all, we had finally put the book together, had checked all the examples, and had done everything

which Dybo, with his demanding standards, had set out to do. But it turned out that we were to encounter incredible difficulties in having the book published. "Nostratic" was an unfamiliar word and concept, and was viewed as something from the realm of fantasy. Slowly and persistently, with the aid of renowned sholars, who more likely sympathized with the tragedy of the author than fully understood the significance of his work, we cleared the way for the book's publication. Even then it sat for almost two years on the publisher's shelf without any action being taken. We were told that there were no properly qualified compositors. Some more time passed as we sought in vain to have the book brought to press. At about that time a division for offset printing opened up at the Academy's publishing house. But there too, no one wanted to spend the time on a book so difficult to prepare (payment being made on a piece-work basis). We managed to make our way into the galley room, to convince the young women who worked there and their superiors that they need only prepare the Russian text, and that I would handle the Latin text and the tables, since I knew how to use a varityper. Within three and a half months the book was ready, and almost five years after the author's death it came out in an edition of almost 1,800 copies. These were quickly sold and the book became a collector's item.

The book was fully appreciated by those capable of accepting innovative works. In his review Vjačeslav Vsevolodovič Ivanov wrote: "The basic difference between V.M. Illič-Svityč's book and earlier or contemporaneous attempts at external comparison of the major language families of the Old World is the exceptional strictness of his method, which is reflected in the selection of material (all possible doubts and obscurities, connected in part with the descriptive character of the words or with their isolated position within a given family, are carefully noted by the author), the thorough elaboration of systems of phonological correspondence and observed semantic shifts (for which the dictionary frequently indicates parallels from such well-known languages as Slavic), and in the completeness of the preparatory analysis of the data within each of the compared language families". "The following selected examples are

intended only as illustrations of the new perspectives, decades ahead of their time, which Illič-Svityč has opened up to us in his work"[10].

At the end of 1972 we held a conference, intended to coincide with the appearance of the first volume of Illič-Svityč's Nostratic work. We were compelled to use the title "A Conference on Historical Comparative Indo-European Grammar" (see footnote 10), since "Nostratic" was still an unfamiliar term and might have made it difficult to organize the conference. The conference itself was notable in that, along with well-known scholars such as V.V. Ivanov, T.V. Gamkrelidze, V.A. Dybo, A.A. Zaliznjak, A.B. Dolgopolsky, V.N. Toporov, I.M. Diakonoff, V.V. Ševoroškin and others, there also appeared a younger generation, which had formed around A.A. Zaliznjak, A.B. Dolgopolsky, V.V. Ivanov, and I.A. Mel'čuk. These were, in the main, graduates and students of the Department of Structural and Applied Linguistics (OSIPL) at Moscow State University, who had received fine training in the theoretical and practical tools of linguistic analysis, and been schooled in scientific inquiry into languages from different families. Their names included: A.N. Golovastikov, G.M. Kellerman, N.S. Panova, V.J. Porxomovskij, S.A. Starostin, V.A. Terent'ev, E.A. Helimsky. They (along with S.L. Nikolaev, I.I. Pejros, O.V. Stolbova, O.A. Mudrak, Anja Dybo, A.I. Militarëv, D.P. Leščiner, and J.I. Testelec) formed the core of the Nostratic Seminar, which since 1972 has been constantly led by Vladimir Antonovič Dybo. This seminar became the informal research group in which Nostratics has flourished.

V. A. Dybo's optimal plan had called for the publication of volume two of "Opyt" with the remaining etymologies from *l* to *ʒ* (about 355 entries all told) worked up to the level achieved in the first volume. However, in Slava's archives there remained only another 108 etymologies in more or less finished form. For the other, approximately 300 entries, he had selected material for the card files, which still required additional authorial work within the guidelines of Illič-Svityč's original concept and style, as well as the addition of new material which had appeared since 1966. Thus, the second volume would have included a mixture of

10 Ètimologija. 1972. Moscow, Nauka, 1974, pp. 182, 184.

what Illič-Svityč had done himself and what had been done by others. Further, the scholars involved in the project were also involved in their own research obligations and could not work with the same intensity as Illič-Svityč did; as a result, preparation of volume two of "Opyt" threatened to drag on for many years.

I decided that it was our obligation above all to publish that which had been done by Slava, and insisted on the publication of volume two in the form which it eventually took: 108 etymological entries (for *l, m, n*, with scattered etyma for various other letters), as well as indexes to volumes one and two. Dybo did not agree with this approach. S.B. Bernštejn turned to A.A. Zaliznjak to arbitrate the decision and Zaliznjak suppported my proposal.

Nonetheless this volume also took five years to publish. Notwithstanding the broad positive response to volume one, the difficulties involved in poublishing volume two did not diminish. Once again we were forced to prepare the book for press ourselves. Nor did the administration of the Institute help us meet the costs of publication: it was necessary to issue a subscription edition, i.e., an edition at our own expense, with S.B. Bernštejn turning the money over to the bursar at the Institute. The whole process proved to be exceedingly time-consuming. We were to sell the entire edition (1,900 copies) ourselves. Fulfilling the function of bookstores turned out to be no easy matter, indeed it was an impossible task. A half-year was spent issuing announcements to all the research centers and universities in the country, and in mailing countless numbers of packages to all parts of the country. In order to return the money to S.B. Bernštejn, we were compelled to sell the books at a higher price. I was helped by dozens of colleagues, but volume two has yet to reach all of its readers, nor has the entire edition been printed. The book has made it overseas only through personal channels.

It's sad to acknowledge that Slava's books have met with a fate as difficult as that which befell their author. Illič-Svityč dedicated his first book ("Nominal Accentuation") to Dybo and myself, and we have

devoted ourselves utterly to the publication of the schoarly legacy of our friend.

A sense of the response in scholarly circles to Illič-Svityč's work, as well as of positive and critical reaction to the publication of the first two volumes of "Opyt", can be gained by reading V.A. Dybo's laconic foreword to the third volume. In 1977 the Institute for Slavic and Balkan Studies of the Academy of Sciences of the USSR held a second conference on Nostratic linguistics[11], intended to coincide with the publication of volume two.

In February of 1978 the Department of Language and Literature (OLJa) of the Academy of Sciences of the USSR proposed to V.A. Dybo that he appear at its next session with a report on Nostratic research in our country. We were extremely apprehensive, since we expected an assault from the scholarly establishment. We were in doubt as to the appropriate form for the paper: to speak on a popular level (as V. V. Ivanov proposed) would have left the door open to easy attack. Dybo chose the right approach: his strict academic exposition of the basic postulates of the Nostratic conception, accompanied by examples prepared on a blackboard, set the tone of possible discussion at a high level. No one dared to conduct a polemic with Dybo on such a level. Nostratics received official recognition from the highest academic organ in the field of philology--the Bureau of the Department of Language and Literature of the Soviet Academy of Sciences. It was recommended that Nostratic studies actually be further developed. Dybo's paper was published in Proceedings of OLJa[12].

Dybo envisaged the third volume as a continuation of the Nostratic dictionary in the form begun by Illič-Svityč and demanded by today's level of comparative historical linguistics. Of this volume only the first part has appeared in 1984. It consists of 25 etymological entries (*p-q*), prepared from Illič-Svityč's data files, but with the addition of a large

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11 Konferencija. Nostratičeskie jazyki i nostratičeskoe jazykoznanie. Tezisy dokladov. Moscow, 1977.

12 V.A. Dybo, "Nostratičeskaja gipoteza. (Itogi i problemy)." Izvestija AN SSSR. Serija literatury i jazyka. Vol. 37, 5, 1978.

body of material which has appeared since his death. This segment of the dictionary was the collective effort of a group of young scholars working under Dybo's direction (for a list of their names, see the Preface). The absence of A.B. Dolgopolsky, who in 1977 emigrated to Israel , was sorely felt.

Although this portion of the dictionary is no longer the work of Illič-Svityč, Dybo insisted on leaving him as author on the title page, thereby underlining Slava's priority in this field of research and the direct continuity between his work and that of his continuers and successors.

Translated by Joseph Schallert

Vladislav Markovič Illič-Svityč (1960)

ABSTRACTS

ON THE FALLACY OF 'DIMINISHING RETURNS' IN LONG RANGE LEXICAL COMPARISON

John Bengtson

A common objection to long-range lexical comparison (such as between Indo-European and other language phyla) is the assertion that comparable lexemes must inevitably diminish to near the vanishing point the deeper one goes in comparing remotely related languages. In the words of Winfred P. Lehmann: "If you go back a few thousand years, comparing words and languages, pretty soon you have so few related words left that you have nothing to compare." (New York Times, Nov. 24 1987) Put another way: "The possibility/probability of linguistic prehistory being proved, convincing, or acceptable decreases rapidly with the number of clearcut admissible resemblances. . . . we reach somewhere in there the point at which comparative research cannot show two languages to be related, even if they are, or where, if standards are set low enough, ANY two languages can be related." (Patrick R. Bennett, in a letter to the author and Mother Tongue, Aug. 2 1988.) Note the words 'pretty soon' and 'rapidly' in the quotes, though no basis for the rate of diminishment is given.

I would like to show that this purported 'law of diminishing returns' has been greatly overexaggerated, and may derive from a faulty extrapolation from lexicostatistics, among other things. Lehmann seems to be referring to the phenomenon of vocabulary replacement, as seen in glottochronology. For example, in classic glottochronology the English equivalent to German Hund is dog, even though the word hound still exists with a specialized meaning. So vocabulary replacement seldom involves the total disappearance of a lexeme; more frequently there is a chain reaction of semantic shifts in the lexical structure of the language, so that the same phonetic sequences remain, but have moved to a different semantic slot. We see no good evidence that there has been any wholesale disappearance of lexemes in the history and prehistory of language, to be replaced by totally new creations. Rather, we see the same phonetic sequences constantly recycled, sometimes with the original meaning intact, often shifted to a related meaning, and occasionally with a radical semantic shift.

By way of illustration, let us look at part of a proposed global etymology for 'bone':

(A) Afro-Asiatic: Hausa k'ā́šī 'bone'; Arabic ḳass 'sternum'

(B) Indo-European: Old Slavic kostĭ 'bone'; Latin costa 'rib; side'

(C) Uralic: Kamassian kot 'rib'; Mordvin kas-ke 'sacrum'

(D) Amerind: Chitimacha katˢi 'bone'; Cavineña (epere-)'katse 'rib'

As we might expect, the apparent original meaning ('bone') remains in some languages, often coexisting with specialized terms ('rib', 'sternum', etc.) in the same language family, while in some families (C) only the specialized terms have survived. We can find more extensive shifts, for example, in the Romance languages: French côte 'rib; slope; hill; coast,

shore', diminutive côtelette 'cutlet, chop', etc. With this cognizance of semantic variation, the recovery of the most ancient vocabulary is far more attainable than Lehmann's and Bennett's dicta would have one believe.

Note that we do not allow for any and all degrees of semantic change. Certainly we must allow for the same shifts that are observed within undisputed local etymologies, such as 'bone' and 'rib' above. Other, less verifiable shifts would be accorded less weight as evidence.

The other countervailing force to the purported 'law of diminishing returns' is the recovery power of multilateral comparison, as opposed to bilateral comparison. Greenberg (1987: 25ff., 341-344) and Ruhlen (1987: 225f., 252ff.) have thoroughly discussed the futility of the bilateral approach and the effectiveness of the multilateral method: "Through multilateral comparison we can extend glottochronological theory to account for resemblances not between two languages, but among any number of languages. For example, if we compare three languages, A,B, and C, we can ask, for a given time period, how many resemblances will be found between A and B, A and C, B and C, and A, B, and C. Clearly every word found in at least two languages of the stock can be recovered by comparison. . . . with only 10 languages, even after 10,000 years about 42 percent of the original vocabulary is recoverable. More languages will, of course, greatly increase these values. . . . Consequently, there is no theoretical limit to the depth at which classification can be carried out when the number of languages examined is large." (Greenberg 1987: 28-29)

To illustrate how this works on a global scale, let us look at the five proposed etymologies below. (Prof. Bennett refers to hypothetical comparisons between 'Egyptian and Quechua' and 'Chinese and Algonkian'. Since the binary method is faulty, we will set up a miniature multilateral comparison of the larger genetic units: Afro-Asiatic, Sino-Tibetan, and Amerind, with the understanding that ideally one would bring all known languages into the comparison, as we have done elsewhere (Bengtson and Ruhlen 1988).) Even with three major linguistic phyla we can see the benefits of multilateral comparison. A bilateral comparison of any pair of language phyla would only recover three items of common vocabulary, while the trilateral comparison allows us to recover five. (This is of course a small sample of our global material. We find no. 1) *ʒuna or *λuna 'nose' in at least 15 taxa, and no. 2) *p'iXwV 'fire' is about as widespread, while no. 5) *CVm(a) 'hair' seems to be somewhat restricted in range.) Instead of the alleged 'rapidly diminishing returns', we are in fact finding that quite a large number of original vocabulary items is recoverable, especially when the most basic parts of lexicons are compared, such as names of body parts ('nose', 'hair', 'foot', etc.), basic elements ('fire', 'water', etc.), pronouns, interrogatives, and negational particles. One might go so far as to say that English, Quechua, or any given modern language still retains much the same word stock, in these basic realms, as its predecessor ('Proto-Human' or 'Mother Tongue') had 50,000 years ago, though much obscured by phonetic and semantic changes. (But not totally obscured,

as Whitney and his successors would have it.)

So when Bennett claims that "degrees of similarity below even the Omotic-AA level will not be adequate to support conclusions of relationship at the proven or convincing levels," he is proceeding on at least two faulty assumptions: a) that we now know all there is to know about the relationship of Omotic within AA (with all due respect to Hal Fleming and Lionel Bender, I don't think they would claim that the work is complete); and b) that comparative work must always proceed by the old, ineffectual bilateral method. To compare AA with only IE, or only Dravidian, would allow the recovery of only a fraction of the common vocabulary of the parent language. It would be tantamount to comparing only Egyptian and Omotic, or only Irish and Armenian. (If the latter two had been the only survivors of the IE family, we might never suspect they were related. See Greenberg 1987: 321-330 for a fine demonstration of this point.) "In seeking a more comprehensive classification, one must avoid the trap of binary comparison, which at this level of research seems so tempting. Rather, one should adopt a global approach, taking into account all of the world's languages, as Dyen suggested." (Ruhlen 1987: 258) Only in this way do we have a scientific method capable of dispelling the illusory 'law of diminishing returns'.

John D. Bengtson
August 1988

	AFROASIATIC:	SINO-TIBETAN:	AMERIND:
(ABC)	1) AA *t(w)n ~ *t(j)n 'to smell': Eg. śn id.; Cush: Burgi śuna 'nose', etc.	ST *(s)na 'nose': TB *s-na 'nose', *suŋ 'smell, scent'	Am *λunV 'smell, nose': Andean: Sechura čuna, Quechuan *sinqa 'nose', etc.
(ABC)	2) AA *p ʕ w 'fire' Eg. p ʕ w; Logone fuu id., etc.	TB *pwâr ~ bwâr 'fire' (*-r suffix, as in Alt. *pʰörV 'fire')	Am *p'iXwV 'fire, burn': Kiowa pʰiɑe 'fire'; Jicaque pwe 'burn'; Moses p'ix 'hot', Shuswap p'ixʷ 'to fry'.
(AB)	3) Sem. *k w l: Arab. kull, Heb. kol 'all, whole'	TB *(m-)kul 'all; 20 (= all digits)'	
(AC)	4) Sem: Arab. sāk 'leg'; Chad: Bolewa šeke 'foot', etc.		Am: Almosan: Kutenai saq' 'foot'; Andean: Quechuan *čaki 'foot', etc.
(BC)	5)	ST *chām 'hair': TB *tsam id.	Am *Cum(a) 'hair': North Pomo cime; Caranga čuma id.

Notes: 1) Illič-Svityč 1967: 342; Illič-Svityč 1971-84: no. 51; Starostin 1984: 24; Benedict 1972: 101, 405; Greenberg 1987: 104, 116, 177; Amerind reconstruction by Vitaly Shevoroshkin. The global etymology is further elaborated in Bengtson and Ruhlen 1988: no. 3.

2) Illič-Svityč 1967: 352; Benedict 1972: 172, 199; Greenberg 1987: 127, 134; Bengtson 1986; Amerind form by Vitaly Shevoroshkin.

3) Benedict 1972: 83, 202.

4) Greenberg 1963: AA no. 34; Greenberg 1987: 115, 173; Key ms.; Bengtson 1986; Bengtson and Ruhlen 1988: no.22.

5) Starostin 1984: 23; Benedict 1972: 29, 191; Greenberg 1987: 88, 229; Trombetti 1905: 194; Bengtson and Ruhlen 1988: no. 25.

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GENETIC AND TYPOLOGICAL APPROACHES TO EXTERNAL COMPARISON OF LANGUAGES

Henrik Birnbaum

Regardless whether we accept the notion of an actually once spoken, fairly homogeneous preprotolanguage termed Nostratic or even are inclined to posit the existence of a Nostratic macrofamily of languages spread over parts of the Eurasian continent and North Africa, there can be no doubt that the protolanguages which themselves may constitute the daughter languages of that preprotolanguage or, alternatively, may form member (or sister) languages of the macrofamily in question -- i. e., Proto-Indo-European (PIE), Proto-Kartvelian, Proto-Altaic, Proto-Uralic, Proto-Dravidian, Proto-Afroasiatic -- not only have an evolutionary history of their own but, not having emerged ex nihilo or being directly relatable to the origin of human speech on our planet, also have a prehistory, Nostratic or other. The following considerations will concern primarily (and use for illustrative purposes) Indo-European (IE, the only language family with which I can claim some familiarity); however, in principle, much of what will be suggested about IE and its prehistory -- or rather, the techniques by which at least in part to recover PIE and its antecedents -- is applicable also to other, perhaps remotely related language groups of the distant past spoken in Asia, Europe, and North Africa.

Certain key notions to be explored here are: divergence vs. convergence (in linguistic evolution); genetic relationship vs. typological affinity (among languages); degrees of linguistic relationship and time depth of language separation (including the viability of an improved method of calibrated glottochronology); comparative vs. contrastive linguistics vs. external comparison of languages, the latter combining procedures of traditional comparative-historical (genetic) and typological linguistics.

Applying some of those concepts and methods to IE data, it should be recalled that the earliest attested pertinent evidence (Hittite, Mycenean Greek) is no older than the second millennium BC and that there is a discrepancy of at least some two-thousand years (4th vs. 6th millennium BC) assumed as the approximate time frame for the emergence of PIE. Controversial is further the localization of the IE protohome, areas around or near

the Black Sea recently having been considered the most likely: Transcaucasia-East Anatolia-Upper Mesopotamia, the Pontic Steppe region, the East Balkans; but consider also the spread of the IE/Old European hydronymy from a Baltic core area (vastly exceeding the present-day Baltic territory).

In order tentatively to reconstruct the initial phase of PIE scholars had essentially to resort until recently (i. e., before the positing of a potential remote relationship between IE and other Nostratic language groups) to two sets of techniques: internal reconstruction (extrapolating from morphophonemic and other alternations of Late PIE) and insights gained from typological linguistics and the theory of linguistic universals (cf., e. g., the intrinsic unlikelihood of but one laryngeal or no more than one vowel in Early PIE). If distant relationship with other (Nostratic) language groups can indeed be established, it would be possible to introduce yet another, comparative approach to reconstructing Early PIE, one analogous to the application of the comparative method (viz., in addition to the technique of internal reconstruction) used for recovering the structures of Early Proto-Germanic, Proto-Celtic, Proto-Slavic, Proto-Italic, etc.

The genealogical tree (Stammbaum) and wave (Wellen) models (or rather, metaphors) of evolution of related languages have been supplemented or superseded by other approaches, e. g., the notions of peripheral vs. central retentions/innovations and, notably, the temporal coincidence/sequence of divergence and convergence. A radical view regarding the emergence of PIE was advanced by Trubeckoj (1936/39) whose admittedly one-sided convergence theory has been unqualifiedly rejected. It is proposed here to reconsider it, granted that it highlights only one facet of the crystallization of PIE; cf. for a parallel (on a smaller scale) the "floating" position of pre-West Baltic (reflected in Old Prussian) between pre-Slavic and pre-Baltic before being firmly integrated into Baltic. If PIE is not merely considered a sister language of protolanguages underlying other Nostratic language groups (and thus one of the daughter languages of hypothetical Nostratic itself) but as having resulted from both divergent and convergent evolutions preceding its ultimate emergence as a clearly defined parent language of a specific (viz., IE) language family, the method known as external comparison, devised for the partial reconstruction of Nostratic (and the Nostratic macrofamily), is bound to yield new insights, combining, as it does, techniques of genetic linguistics (the comparative method, internal reconstruction) and typological linguistics. The former focuses on identities and correspondences in the expression plane (sound shape), the latter on conformities and analogies in the structuration of the content plane (semiotics

and grammatical structure) of language. Also, while the former is primarily concerned with divergence, the latter -- in a fashion reminiscent of, though not fully identical with, the ascertainment of language alliances (Sprachbünde) within more restricted convergence areas -- pays close attention, in particular, to phenomena of convergence and languages in contact, including interfrence, blending, and borrowing. In fact, given the hierarchical superordination of typology over genealogy in language classification (with each language family in principle at the same constituting a linguistic type, but not vice versa), typological considerations will ultimately take precedence over purely genetic criteria in the establishment of such presumed preproto-languages and/or macrofamilies as Nostratic. Similar considerations are thought to apply to other major language areas such as East and Southeast Asia, sub-Saharic Africa, the Americas, and Austronesia.

MATERIALS FOR GLOBAL ETYMOLOGIES

Vaclav Blažek

[Blažek's list contains 12 "world roots" (words), among them nine designations for body parts. This area of the core vocabulary is the stablest. Note that in many cases the words for body parts simultaneously designate corresponding actions: 'eye' and 'see'; 'ear' and 'hear'; 'tooth' and 'bite, gnaw'. Incidentally, Nostratic *gini/*nigi 'tooth; gnaw' may be reconstructed as originating from the Proto-World *gini/*nigi 'tooth'. One may add to Blažek's data Indo-European *ghen- 'to gnaw' present in Germanic *gnag- (› Old Engl. gnagan 'gnaw', Old Norse gnaga 'bite') and *gnatt- (› Engl. gnat). The Indo-European root was *ǵhen- rather than *ghen- since Nostratic had a front vowel after *g. The correspondence between IE *gh, *ǵh, *gwh and Nostr. *g is regular. Root variations of different types are reconstructed for Proto-World. They explain some later variations in Nostratic, Sino-Caucasian and their daughter languages. Note also that Blažek reconstructs only three Proto-World vowels: *a, *i, *u.

Blažek's comparisons and reconstructions take into consideration such correspondences as Congo-Saharan *g : Nostratic *g : Sino-Caucasian *g : Austric (=Austronesian and Austro-Asiatic) *g : Indo-Pacific *g : Australian *g, hence Proto-World *g. Also Khoisan *k : Congo-Saharan *k : Nostratic *k : Sino-Caucasian *k/*kw : Austric *k : Indo-Pacific *k : Australian *k : Amerind *k, hence Proto-World *k. The reconstruction of Proto-World *t' and *k' (Blažek transcribes them as *t and *k) is based on Nostratic data, i.e. *t' and *k' respectively (the same glottalic consonants are present in Amerind and Sino-Caucasian). I would prefer, therefore, to reconstruct the Proto-World word for 'eye, see' as *?ak'u/*?uk'a.

As for the root *kuni 'elbow, knee' (i.e. 'joint'), Western Nigritic (< Congo-Saharan) *-kwunti and Daghestanian (< North-Caucasian < Sino-Caucasian) *Q'wIVnthV seem to represent a different word which might ultimately be related to *kuni. (Note the symbol I in the Daghestanian/North-Caucasian form which designates pharyngalization of the preceding consonant; Starostin now prefers the symbol Ħ).

As far as the word for 'fingernail' (*pari) is concerned, we may add Sino-Caucasian *pArV (or *bArV) 'claws, paw, cupped hand' (Sino-Tibetan *Par, Yeniseian *pər). This root was compared with Nostr. *pArə̈, *pAr/č/V 'nail, claw, finger' by Starostin in his paper Nostratic and Sino-Caucasian (1988). This comparison strengthens the reconstruction *p in the anlaut. Note that Nostr. *-č- in the second variant is a suffix when taking into consideration other words with similar suffixes.

It is possible that Blažek mixed together two roots for 'burn, be hot' in his reconstruction *taki/*tuki. Starostin (op.cit.) identifies two different Nostr. roots, one present in Turkic *toga, Uralic *tə̈/ɣ/V- 'fire' and another present in Altaic *dakV and IE *dhegwh- 'burn'. The former is traditionally rendered as Nostr. *t'/o/gV 'fire'. Starostin compared it with Sino-Caucasian *tVKwV 'burn, glow, kindle' (in Sino-Tibetan */dh/ekw id. and Yeniseian *dVk- or *dVg- 'light, candle'). - V.S.]

ABBREVIATIONS: AN = Austronesian; And = Andamanese; AuA = Austro-Asiatic; Bq = Basque; Bu = Burushaski; Cc = North Caucasian; Dg = Daghestan; Dr = Dravidian; E = East; Kf = Kordofanian; LB = Lolo-Burmese; Mu = Munda; N = North; Nil = Nilotic; NS = Nilo-Saharan; Pp = Papuan; S = South; SW = South West; ST = Sino-Tibetan; Tib = Tibetan; W = West; WN = Western Nigritic.

macro-phyla / proto-forms	Khoisan	Congo-Saharan	Nostratic	Sino-Caucasian
*matu/i 'forehead'		ENil&Kul *mataŋ 'cheek'	*mati 'forehead'	LB*mwat 'head' Bu mʌto 'brains' Dg*mət' 'face'
*'aku 'eye; see'	Hadza 'ak^{W}a 'eye' /< Kul *ekw- 'eye'?/	NS *'ak^{W}i 'see; eye'	*'aku~ 'ugV 'eye; see' > know	
*ṭugi/nV/ 'ear; hear'			*tugi/ṭugni /> ṭung-/ 'hear; ear'	
*wina 'ear; hear'		NS *winV 'ear'	Dr*vin- 'hear'	
*gini~nigi 'tooth'		WN *nín-, *-nighin-; KF *-ni-; NS *nigi 'tooth'	?*nigi 'tooth'	Ba /h/agin 'molar' ST*ŋə 'tooth, tusk'
*ṭali~ḍali 'tongue'	*tali 'tongue'	NS *ḍali/mi/ 'tongue' KF: Tumtum djāro id.	*ṭili 'tongue; mouth'? ? NDr*tarr-/ tat- 'tongue'	? ST*dlag 'tongue'
*pari 'fingernail'			*pari 'finger/nail/'	? ST: Tib bran-mo 'finger'
*kuni 'elbow, knee'	*kuni 'elbow'	WN *-kwunti 'knee' ENil *-k$_{ʒ}$Uŋ 'knee'	*kuɲña 'knee, elbow'	Dg ʔ'wIʌnt^{h}ʌ 'elbow, knee' ? ST*kwaŋ 'crooked'
*ṭari~ṭuri 'leg'		NS *tari /~*turi/ 'leg, foot'	*ṭuri 'leg' /~*ṭari ?/	Dg: Udin tur 'leg, foot'
*taki~ṭuki 'burn, be hot'		WN *ṭuk- 'boil; be hot' KF *tik 'fire' NS *tukV 'burn; be hot'	*tuki~taki 'burn'	
*waru 'burn, be hot, fire'		NS *waru 'burn'	*warV 'burn'	ST: Baric*war 'fire'
*k/ḳuwa/i 'rain'	ǂkãũ 'to rain'	NS *kuwi 'rain'	? AA: ECu *koyy- /<*ḳuwy- ?/ 'wet'	WCc *k^{W}a 'rain' ST*'ku 'water'

macro-phyla / proto-forms	Austric	Indo-Pacific	Australian	Amerindian
*matu/i 'forehead'	*mata/u 'eye'			*mata 'forehead'
*ʔaku 'eye; see'			? SEBundyil uko 'eye'	*ʔaku 'eye'
*tugi/mV/ 'ear; hear'	AuA *tVK/n/V 'ear' AN *daŋaR 'ear'	Pp *da/n/gu/ir 'ear'	Dyangadi digai Nyungik dwonga 'ear'	
*wina 'ear; hear'			*wina-~wuna- 'to hear'	
*gini~nigi 'tooth'	AuA *ginV 'tooth, tusk' AN: gənih 'Stosszahn' /Malese/	Pp *nVgV~gVnV 'tooth'		
*tali~dali ° 'tongue'	AN *dilah 'tongue'	And *tal- Tasm *tulana 'tongue'	*DHalaNY 'tongue'	*ta/Ha/l 'tongue'
*pari 'fingernail'		Pp:Kire far 'finger'	SW *piri 'fingernail'	
*kuni 'elbow, knee'	AuA *kuN 'elbow' /N=nˌŋˌm/		SW *kun- 'elbow'	
*tari~turi ° 'leg'			*DHarra 'thigh'	*tarV 'leg, foot'
*taki~tuki 'burn, be hot'	Mu: Sora tagē 'be hot, burn'	And: Oenge tuke 'fire'	Gudung toko 'fire'	
*waru 'burn, be hot, fire'			*waru~warlu 'fire'	
*kuwa/i 'rain'		Pp *kuwi 'rain'	? *kuwara 'water'	*kuwi~kiwa 'rain, water'

INDO-EUROPEAN AND EAST-NOSTRATIC VELAR STOPS

Vladimir Dybo

V. M. Illich-Svitych's prinicpal achievement consists in the discovery of several non-trivial correspondences in the Nostratic material used for comparison. I will elucidate this with an example.

When the researchers directed their attention to the coincidence of roots such as: 1) IE ĝlōu- 'brother's wife' : Ur kälü 'relative by marriage (f)' : Alt käli(n) 'wife of a younger brother/son, sister's husband'; 2) IE k̂es- 'cut' : Ur käć̈ä/keć̈ä 'knife, spike' : Alt kʿäsä 'cut'; 3) IE kap-/ghabh- 'grab, take, hold' : Ur kappV 'grab' : Alt kʿapa-/kʿaba 'grab'; 4) IE kʷo- 'who' : Ur ko-/ku- 'who', etc., - they based their observations on a specific resemblance in phonetic shape (a similar consonantal structure of the roots) and on a sufficient likeness in meaning. The result was the establishment of the following correspondences: IE k^{w}, $\hat{k}$, k : Ur k; IE g^{w}, $\hat{g}$, g : Ur k-, - and so on. These correspondences are trivial, since IE k^{w}, $\hat{k}$, k, g^{w}, g etc. can correspond only to Ur k (in the initial position in Uralic there are no other gutturals) and having listed these columns of correspondences we actually do not acquire any new information. However, when we arrange IE - Eastern Nostratic (that is, IE-Ur-Alt-Dr) correspondences which have gutturals, according to the nature of the IE gutturals, then we get an interesting result:

I. I E L A B I O - V E L A R S :

Indo-European	Eastern Nostratic	Dictionary No
1. k^{w}er- 'build/make'	Ur kurV-/korV 'weave, baste (as in sewing), fasten together'	236

		Alt KurV 'adapt to, build arrange' Dr KurV- 'weave, tie together spin thread'	
2.	k^{w}es- 'woven basket, woven item'	Ur kuća-/kоćV- 'birch bark basket/container'	241
3.	k^{w}r-mi- 'worm, silk-worm', (?)k^{w}er- 'chew up, break'	Alt KorV 'worm, silk worm'	234
4.	k^{w}o- 'who' (k^{w}-i- 'what' and other interrog. pronouns)	Ur ko-/ku- 'who' Alt k'a-/k'o- (stem for interrog. pronoun)	232
5.	k^{w}el- 'round, to revolve'	(?) Ur kolV 'circle' Alt KolV '(inter)mix, rotate (oneself)'	202
6.	k^{w}eiə 'to rest'	Ur koya- 'to lie/rest' (?) Alt *Kü- 'await' Dr kē- 'to rest/lie'	233
7.	k^{w}el- 'kin, family'	Ur külä 'rural commune, village, dwelling, house' Alt Külä 'house(hold)' (?) Dr kül 'family, crowd'	239
8.	g^{w}es- 'extinguish'	Ur kupsa-/kopsa- 'extinguish' (?) Alt gupV 'extinguish'	185
9.	g^{w}eiə- 'be healthy, live'	Ur kōya 'fat, fatty' (?) Alt: Kalmyk xoyŏ 'nourishing, plentiful'	168
10.	g^{w}eiə- 'skin, hide'	Ur koya 'rind, bark, crust' (?)Alt Kuy-ka 'skin, hide'	169
11.	g^{w}en- 'wife, woman'	Alt küni 'one of the wives (in polygamy)'	178
12.	(?)g^{w}erə 'to swallow'	Ur kurkV- 'gullet' Dr kurkV- 'gullet, throat'	91
13.	(?)g^{w}el- 'to drip, pour, gush out; source'	Ur kl̥ä l̥V or külV 'lake, gulf of a river' Alt kōlV 'lake, bay, overflow (noun)'	177

		Dr kula- or kola 'reservoir, pond, lake'	
14.	g^{w}heə- 'light colored or illuminated'	Ur kojV 'dawn, sun' (?)Alt *gia-w-an 'dawn'	85
15.	g^{w}her- 'to burn, not, hot coals'	(?)Alt gur(V) 'hot coals; catch fire'	95

II. I E P A L A T A L S :

1.	ḱer- (in derivatives) 'rime, frozen snow-crust, ice'	Ur kirV, kirte 'frozen snowcrust Alt kʿir(a) 'rime, hoar-frost, first snow'	230
2.	ḱerə- 'to ruin/break'	Alt kʿir(a) 'to plane, scrape, shear, snip'	231
3.	ḱel- 'stem, stalk, prickly stem'	Alt kʿila 'a thick hair' Dr kel 'feather, a hair' Ur kalke 'a hair, combings'	228
4.	ḱer- 'horn/antler, head, peak/crest'	(?)Ur *kr̥ek-/*kērek 'crown (of the head), top of the head, uppermost part'	227
5.	(?) ḱad-/Ḱeiḍ- 'to fall'	Dr ketV 'to fall, fall off'	225
6.	ḱes- 'cut'	Ur käćV/kećä 'knife, spike' Alt kʿäsä 'cut'	196
7.	ḱer- 'tie up'	Ur kärV- 'tie up (strongly), wrap up' Alt kʿära 'tie up (strongly), draw tight'	197
8.	ḱen- 'empty' (adj.)	Ur kEñV- 'light (in weight)' Alt kʿäńü id.	226
9.	ḱepə- 'hoof, paw'	Ur käppä 'paw'	222
10.	(?)ǧerə- 'old, decrepit'	Dr kir(a) 'old'	165

11. ĝlou- 'brother's wife'	Ur kälü 'relative by marriage (husband's sister, brother's wife, etc.); sister's husband' Alt käli(n) 'wife of younger brother/son; sister's husband' Dr kal- 'father's brother's wife; aunt'	162
12. ĝieu- 'to chew'	Alt käb[ä] 'to chew'	160
13. ĝh[e]l- 'illness, damage'	(?)Alt gil(a) 'hurt, be ill, be sorrowful'	83
14. ĝhelə-/ĝhleə- 'shiny, light colored', ghleə-dh- 'smooth, shiny'	Ur kī[ɨ]V- 'smooth and shiny' Alt gilu-/gila- id.	84
15. ĝherə-/ĝhreə- 'dawn, to shine'	Alt gĒra 'dawn, morning light	82
16. ĝhes- 'hand, arm'	Ur käte- 'hand, arm' Dr kac- id.	80

III. I E V E L A R S :

1. kelə- 'raise/pick (oneself) up; mountain, hill'	Alt k'ali- 'raise/pick oneself up'	210
2. ker-, ker-s- 'black, dark'	Alt Karä 'black' Dr kär 'black, dark'	213
3. kap-/ghabh- 'grab, take, hold'	Ur kappV- 'grab' Alt k'aba-/k'apa 'grab' Dr kavv-/kapp- 'seize (with the mouth), snap (at)' kava- 'grab'	190
4. ker-, ker-s- 'to burn, fry; fire'	Dr kar(V)- 'scorch, be singed, burn' Ur korpe 'to burn' (with o<*a in a closed syllable preceding a liquid, as in polta : pâla 'burn')	215

5.	ker- 'rind, peel, skin'	Ur kōre (<*kāre) 'rind, peel' Alt Käŕ- 'rind, peel' (Also a variant: Ur kere : Alt k'e[ŕä])	217
6.	kes- 'to comb, scratch'	Dr kaž̌ž̌- 'combing' (noun) (cf. Ur *kašV > Fin kahnaa 'to rub')	218
7.	ken- 'be born; young'	Dr kan- 'give birth'	211
8.	ker- 'stone, rock'	Dr kar(a)- 'shore, cliff, edge'	216
9.	ket- '(woven) construction; vessel, container	Dr katt- tie up, build; woven construction, vessel, container'	192
10.	ke(ə)p- 'to fell, to hew'	(?)Dr kappu (< *kāppu ?) 'to dig, pit, hole'	193
11.	gol- 'bare, bold'	Ur kâlV 'film, thin skin; bare, smooth' Alt Kâl[i]- 'to skin/peel; crust; bare' Dr kal- 'to peel/skin	156
12.	gem- 'grab, take, squeeze'	Ur *kama- (> kama-lV/ koma-rV) 'hollow of the hand, handful'	157
13.	gemb- 'a growth, tumor; lip; mushroom'	Ur kampV 'mushroom'	158
14.	gher-, gherə-/ghreə- 'thorn, spike, branch'	Ur kara 'thorn, branch, conifer' Alt gara 'spike, branch, conifer' Dr kar(a) 'thorn, spike'	78

We note that the IE reconstructions do not yield any information whatever which could explain the split of IE gutturals into three types (as we know, all attempts by Indoeuropeanists to reduce the three series of gutturals to two, or to one, have failed). However, if we direct our attention to the right-hand columns, it will be seen that in the group "IE Labio-Velars" the rounded vowels (u, o, ü, ö) appear regularly in Eastern Nostratic; in the group "IE Palatals" Eastern Nostratic has front vowels (i, e, ä); while in the group "IE Velars" Eastern Nostratic has the vowel a.

To put it differently, IE GUTTURALS HAVE UNDERGONE COMPLEMENTARY DISTRIBUTION IN ACCORDANCE WITH THE NATURE OF THE EAST NOSTRATIC VOWELS.

This phenomenon may be very simply interpreted if we accept the primacy of the East Nostratic vocalism, which was "lost" in IE through the system of ablaut which developed in IE, but left traces which are visible in the differentiation of three series of gutturals (a result of great importance not only for the theory of the IE consonant system, but to an even greater degree for the theory of IE vocalism and ablaut).

It must be emphasized that it is the right-hand column that provides information on the causes of the distribution of the IE gutturals, and it does so, not by means of its consonants but through its vowels. Naturally, this information is in no way connected with the process of selecting the materials: the correspondences were established, on the basis of similarity of consonants, and the conclusion itself not only was not foreseen in the course of establishing the lexical correspondences, but it seemed to all concerned to be completely improbable.

It would be difficult to over-estimate the significance of this result (obtained by Illich-Svitych in 1963) for the Nostratic hypothesis.

THE PREHISTORY OF THE PROTO-INDO-EUROPEAN VOWEL SYSTEM IN COMPARATIVE AND TYPOLOGICAL PERSPECTIVE

Joseph Greenberg

1. THE EURASIATIC LANGUAGE FAMILY: I. Indo-European, II. Uralic, III. Yukaghir, IV. Altaic (Turkic, Mongolian, Tungusic), V. Koreean, VI. Ainu, VII. Japanese, VIII. Nivkh, IX.Chukotian, X. Eskimo-Aleut.
   II and III; V, VI, and VII probably form subgroups.

2. Pedersen (1933:309): "Probably Finno-Ugric is to be compared to Indo-European in its post-Ablaut stage, while it should be compared to Semitic in its pre-Ablaut stage. From this it would follow that the separation of Indo-European and Semitic was at a more ancient period than that between Indo-European and Finno-Ugric."
   Pedersen (1935:330): "The front-back harmony of Uralic is an innovation. However there are numerous other cases of vowel alternation for which an internal Uralic explanation has not been found so that one should not exclude the possibility of finding traces of Ablaut which are shared with Indo-European." (cf. Setälä 1896, Lehtisalo 1933, Steinitz 1950)

3. The "standard" doctrine is that i and u are not really vowels in PIE but are sonants parallel to r, l, m and n. For the only "true" vowel series we have e (=e grade), o (=o grade), zero (=zero grade with loss of accent). These three grades are also seen in ey, oy, y~i and ew, ow, w~u just like er, or and r~r etc. Hence i and u can nomore alternate with e and o that can r,l, m or n.
   Huebschmann (1885: 193-4 Das indogermanische Vokalsystem). "i and u are only consonants and cannot occur in any Ablaut series except with y or w. They can never be lost. Whenever they appear now in any series as a vowel, they have arisen by secondary processes."

4. But there are numerous examples of i~e and u~o especially in Greek, Baltic and Slavic, but also elsewhere.
   a. Guentert, H. (1916: 28-29, Indogermanische Ablautsprobleme) concerning Greek words with i and u:
   "These words have always been a true dilemma (eine wahre Crux) for scientific linguistic investigation."
   b. Kretschmer, P. (1891, ZfVS 31:378). "In Greek we find traces of unaccented vowels whose nature has been up to now puzzling (raetselhaft)."
   c. Brugmann, K. (1897, Grundriss, 2nd ed. I. 119), regarding Greek, "In many forms i appears where we should expect e without it yet having been possible to explain i in a satisfactory way."

d. Leskien, A. (1910:17, Handbuch der altbulgarischen Sprache, 5th ed. "The alternation of u and o is unclear."
e. Pokorny, J. (1959, Indogermanische etymologisches Woerterbuch I.298), concerning eghs 'out of' refers to Slavic and Baltic forms "with difficult i" (mit schwierigem i).
f. Senn, A. (1966, Handbuch der litauischen Sprache, 78) "One of the commonest deviations (Entgleisungen) in Ablaut Series I is the introduction of an -i- grade without the help of a liquid or nasal."
g. Schwyzer, E. (1939, Griechische Grammatik I, 351), "Often Greek i~e corresponds to Slavic i~e (also u~o)."
h. Meillet, A. (1934:48, Le slave commun, 2nd ed.)concerning Slavic chetyre, chityre 'four' etc. "Il serait imprudent de rien affirmer à ce sujet".

5. a. The "rehabilitation" of i and u as Indo-European vowels (Kurylowicz, Schmidt-Brandt, Szemerényi, Gamkrelidze and Ivanov et al.).
b. The theory of i and u as reduced forms of e and o respectively (Schwa secundum). Szemerenyi (1978, Introducción a la linguistica comparativa, p. 186). "But how could for example the strongly accented interrogative pronoun *kwis, *kwid be weakened forms?" Full acceptance by Melnichuk (V.Ja. 1979) and Palmaitis (IF 85, 1980) of i and e, u and o as equal alternants. Indifference to accent of iand u, e.g. Slavic variants *ís-mi, *és-mi 'I am'.

6. RECONSTRUCTION OF INDO-EUROPEAN KWI- 'WHO' AND I- 'HE/SHE/IT/THIS'

NOM. SING. (M.F.)	KWI-S	I-S
NOM., ACC. SING. (N.)	KWI-D	I-D
ACC. SING. (M.F.)	KWI-M	I-M
GEN. SING.	KWE-SYO	E-SYO
DAT. SING.	KWE-SMOI	E-SMOI
NOM. PL. (M.F.)	KWEY-ES	EY-ES

(Szemerenyi, 1978, Introducción a la linguistica comparativa)
cf. Lydian qe-, qi- alternate stems of the relative pronoun.

7. PROPOSED INDO-EUROPEAN VOWEL SOUND SYSTEM

I	E	U
E	A>O	O

8. I.E. *KWENE AND COGNATE EURASIATIC FORMS

a. I.E. -*kwene 'indefinite' (Pokorny 1959:641), Sanskrit -cana as in kaś-cana 'anyone', Avestan -cina, Germanic - in as in Old Saxon hwer-gin; Anglo-Saxon hwer-gen; Old High German wer-gin 'somewhere'; Old Norse hver-gi 'nowhere'.

b. DIRECT SINGULAR		SINGULAR STEM	PLURAL
FINNISH	KEN	KE-, KEN-	KE-T-KA
KARELIAN	KEN	KE-, KEN-	KE-T
INGRIAN	KEN	KE-	KE-T
KOLA LAPP	KENE 'ANYONE'	KENE-	KE-G-NE
	KE 'WHO'	KE-	KE-G
ZYRYAN	KIN	KIN-	KIN-JØZ
YUKAGHIR	KIN	KIN-	
MONGOLIAN	KEN	KEN-	KE-D
ALEUT	KIN	KIN	KIN-KU-T
	WAN 'THIS'	WAN	WA-KU-S
ASIATIC ESKIMO	KI-NA (absolutive)	KI-TUM-	KIN-KU-T
	TA-NA 'THIS'	TA-M-	TA-KU-T

c. Korean -kena generalizing enclitic e.g. nŭ kao-kena 'who comes-ever'='whoever comes'.
Nivkh aŋ-ha-gin 'whoever'; aŋ 'who?' ha- 'to be'.

9. SOME VOWEL SYSTEMS

I	Ä	U	ə
E	A	O	

CHUKCHI VOWEL HARMONIC SYSTEM (BOGORAS, 1934)

I	E	U	ə
E	A	O	

CHUKCHI (SKORIK 1979), KORYAK AND KAMCHADAL VOWEL HARMONIC SYSTEM

I	Y	U
E	A	O

NIVKH VOWEL SYSTEM (WITH SURVIVALS OF HEIGHT HARMONY)

I	E	U
E	O<A	O

PROPOSED INDO-EUROPEAN SYSTEM

REMARKS ON HISTORICAL PHONOLOGY: FROM NOSTRATIC TO INDO-EUROPEAN

Mark Kaiser

[What follows are comments on M. Kaiser's presentation. Under **A** (see data below) he cites the traditional interpretation of IE laryngeals: laryngeal *H_1, i.e., a palatal [ḣ] before IE *e does not change the quality of this vowel, whereas *H_2, a "regular" laryngeal [h], transforms the following *e to *a; as for IE *H_3 = [h^w], it changes the following *e to *o. IE laryngeals disappeared in all IE daughter languages except Anatolian (and Armenian?), hence the Greek reflexes e, a, o. In Anatolian, IE *a and *o became *a (› Hittite a). Anatolian data show clearly that either the traditional interpretation of IE laryngeals was wrong or some substantial elements were lacking in it. Kurylowicz's introduction of an additional laryngeal was not enough. It would explain only the reflexes of an unstable laryngeal (› Ø in Anatolian and Hittite) versus a stable one (› *ḫ in Anatolian [› Hittite ḫ]) before *a (› a). It would not account for cases like "unstable laryngeal + *o" versus "stable laryngeal + *o" (despite the lack of differentiation between IE *a and *o in Anatolian). Cf. IE *hant- 'front' › Anat. *ḫant- id. › Hitt. ḫant- id. versus IE *howi- 'sheep' › Anat. *ḫawi- id. › Luw. ḫawi- id.

Kuryłowicz's approach was elaborated by Eichner whose main distinction was between "IE *h_2 ", a stable laryngeal which has been preserved in Anatolian (changing the following *e to *a), and "IE *h_1, *h_3 " (and "zero") which disappeared in Anatolian. This approach has several weak points: 1) The difference between IE *hant- and *howi- remains unexplained (an introduction of a special laryngeal, which does not disappear but also does not turn the preceding vowel to *a, is required); 2) A complex set of units is postulated (*h_1, *h_3, "zero") to explain the difference between IE vowels *-e-, *o-, *-a- in roots in which Anatolian lacks an initial laryngeal.

A much simpler explanation is the following: IE had a stable laryngeal (say, *X) which became Anatolian *ḫ (› Hittite and/or Luwian ḫ), as well as an unstable laryngeal (say, *H) which disappeared in Anatolian.

Under **B** and **C** Kaiser cites Nostratic sources (consonants **q, **9 [="back g"], **x, **ɣ) of IE *X, as well as those (**ḫ, **ʕ , **?) of IE *H. Nostratic data confirm an IE reconstruction made when taking archaic Anatolian into account. Nostratic shows that IE sequences *Xa-, *Xo- retain the vowel **a, **o of Nostratic; IE *Ha-, *Ho-, *He- retain **a, **o, **e respectively.

Under **D** Kaiser cites Nostr. roots and their reflexes in Nostr. daughter languages (IE, Afro-Asiatic, Kartvelian, Uralic, Altaic, Dravidian). Sets 1 - 8 include Nostr. roots with initial consonants which merged into IE *H- (unstable laryngeal: "zero" in Anatolian). Sets 11 - 19 include Nostr. roots with initial consonants which merged into IE *X- (stable laryngeal: preserved in Anatolian as *ḫ). Sets 21 - 22 include Nostr. roots with non-initial consonants which became IE *-X-. Note that this *X changed the preceding front vowel into *-a-.

There is a possibility that IE *X represented, actually, not one but two IE "laryngeals," namely a voiceless *x (which has been preserved in Armenian: cf. sets 12, 13; cf. also Armenian haviw 'shepherd', and other words with h- of IE origin: in Anatolian the reflex was *h-, cf. Luwian hawi-, Lycian xawa 'sheep'), and a voiced *ɣ (which disappeared in Armenian but remained in Anatolian: cf. sets 16, 18, 19). IE *x originated from Nostr. voiceless consonants **q, **x; whereas IE *ɣ originated from Nostr. voiced consonants **9, **ɣ .

Under **E** Kaiser provides correspondences between IE stops (T = *p, *t, *k/*ḱ/*kʷ in traditional notation, etc.), Afro-Asiatic, Kartvelian and Nostratic stops. It is quite possible that the IE triad of stops was actually T̲, T, D (where the strong T̲ might have been an aspirated Th).

Under **F** the IE triad of stops is represented in terms of the "glottalic theory" (traditionally voiced = "glottalic"). The last column shows Bomhard's incorrect interpretation of phonetic correspondences between IE D (= T' in "glottalic theory") and T, on the one hand, and Nostratic T, T' on the other hand. According to Illič-Svityč and Dolgopolsky, IE D < Nostr. T; IE T < Nostr. T' (this rule is well supported by language material). According to Bomhard, IE D (his T') < Nostr. T'; IE T< Nostr. T (this "rule" is not supported by

language material as has been shown in several reviews of Bomhard's book Towards Proto-Nostratic).

Sets presented under G show that Semitic (and other) borrowings into IE contain D or Dh where the donor language had D (or a voiced fricative). IE had T where the donor language had T'. (IE examples are given in terms of this theory. It is clear that Semitic glottalized stops are not reflected in IE as "glottalized stops" but as plain stops, whereas Semitic voiced [and voiceless] stops are reflected in IE as "glottalized stops". These facts strongly refute the "glottalic theory.")

Finally, refer to Kaiser's H. According to T. Gamkrelidze, there are many IE borrowings in Kartvelian. Even if we accept this thesis, it remains unclear why IE "glottalized stops" (traditionally D) are regularly interpreted in Kartvelian as voiced, and not glottalized, consonants. On the other hand, IE "glottalized stops" are not regularly rendered as T' in Kartvelian. But one can not accept the idea of extensive borrowings of IE words into Kartvelian since almost all these words belong to the core vocabulary (body parts, words like 'know', 'lie', 'put', 'run (water)', 'warm', 'high, big', 'earth', etc.) Such words are seldom borrowed from language to language. In most of the cited sets we deal with Nostratic heritage in both IE and Kartvelian and not with borrowings. This is supported by exact phonetic correspondences between IE and Kartv. cognates (see tables in the first volume of Illič-Svityč's Nostratic dictionary).

As for the comparison made in the first set (IE *iuk'-om 'yoke' [traditionally *iug-om] : Kartv. *uɣ-el- id.), it seems to be incorrect. As Illič-Svityč showed in 1965, Kartv. *uɣel- is a borrowing from Semitic *ɣull (with metathesis).

The absence of extensive IE borrowing in Kartvelian (or vice versa) shows that Indo-Europeans and Kartvelians were not neighbors. Striking similarities between both languages (reflected in the stable lexicon, grammatical elements and morphonology) can be explained not by mutual influence but as Nostratic heritage. Both IE and Kartvelian apparently originated from two closely related West-Nostratic dialects, both having evolved from some ancient Nostratic dialect (this being a hypothesis first formulated by I. Diakonoff). - V.S.]

A.

IE >	Greek	Hittite
$*H_1e$ >	e	e
$*H_2e$ >	a	ha, a
$*H_3e$ >	o	ha, a

B. Nostr. >	AA	Kartv.	C. IE. >	Ht.
**q	x	q	X	h
**9	γ	γ	X	h
**x	ḫ	x	X	h
**γ	ʕ	γ	X	h
**h	h	h>0	X/H (?)	h/0
**ḫ	ḫ	h>0	H	0
**ʕ	ʕ	h>0	H	0
**ʔ	ʔ	h>0	H	0

D.

1. **ʔesA 'dwell, stay' > IE *Hes- 'be' (Ht. es-); AA *ʔIs 'be', etc.; Ur. *eśA '(settle) a place'.
2. **ʔita 'eat' > IE *Hed- 'id' (Ht. et- 'id', Arm. utem 'I eat' < *od-); AA *t(j)ʔ/ʔ(j)t 'id'; Mongolian *ide- 'id'.
3. **ʔoq'i 'sharp' > IE *Hoḱ- id. (Ht. akkala 'furrow', Lat. occa 'harrow'); AA *ʔuk' 'sharp'; Ur. *ok(k)V id.; Alt.: Turkic *ogi 'arrow, bow', Mong. *oki 'tip', etc.
4. **ʔe/i 'demon. pronoun' > IE *He- 'id' (Ht. e- 'id'); AA *j 'id'; Kart. *(h)i 'id'; Turkic *-i 'possessive suffix'; Mongolian *i- '3rd sg pronoun'; Tungus i '3rd sg. prn.'; Korean i 'demon. prn.'; Mong. *e- 'id'; Dravidian *e/i 'id'; Uralic *e-/i- 'id'.
5. **[ḫ]aʔ[i] 'fire' > IE *Ha(H)i > *Hai- 'burn, shine' (Ht. *aya- > ai-, a-, e- 'be warm, hot'); AA *h&j (Eg. ḫʔj 'fire, to shine').
6. **ḫarV 'set free, become free' > IE *Har- 'id' (Ht. arawa- 'free', Lyc. arawa 'exempt from tax or duty', Lith. arvas 'free'); AA *ḫr(r)- 'liberate, free-born'.
7. **ʕal'V 'cross over (a mountain)' > IE *Hal- 'on that side / beyond that'; AA *ʕl- 'cross over a mountain, climb, summit'; Turkic *aĺ(a) 'id'; Mongolian (MidMong. alu-s 'further, on that side'); Tungus *al(a) 'distant, removed'.
8. **ʕandV 'man' > IE *Handh- 'id' (Hitt. antu(wa)ḫḫa-, antuḫsa- 'id'); AA (Cush. *ʕVnd- 'people, family, kin').
9. **horV 'rise, move upward' > IE *Hor- 'rise, move' (Ht. arai- 'rise, stand up', Arm. y-ar-ne-m 'I arise', Gk. ornumi 'I agitate, set in motion', Gk. ornumai 'move, arise, rush, hurry', Lat. orior 'I arise'); AA *hr 'move, agitate'; Mongolian *ora-/*oro 'enter'; Tungus *ora- 'top of object, climb up'; Korean ori- 'rise up'; Turkic *orä- 'rise up, elevated place'.
10. **ha 'demonstrative pronoun' > IE *Ha-n 'id' (Ht. a- 'id', Gk. an 'perhaps, another time,' Lat. an 'and, perhaps' (cf. IE *Hanio- > Ht. anni- 'that', Arm. an, ajn 'he, this, that' etc.)); AA *ha; Kartvelian *ha- 'id'.

11. **qalV 'lower' > IE (Ht. ḫalie- 'get down on one's knees,' ḫallu(i)- 'low, deep'); AA *xl- 'id'; Uralic *ala 'lower part'; Turkic *al- 'id'; Kor. arai 'under'.
12. **qant'V 'front' > IE *Xant- (Ht. ḫant- 'front part'), Arm. hanc`em 'I lead'; AA *xn[ţ] 'front/southern part, nose'; Tungus *anta (Evenki antaγa 'southern slope', Ude anta 'id', etc.); Kor. antha 'front'.
13. **qap'V 'seize' > IE *Xap- 'id' (Ht. ḫappina- 'rich', Arm. hap`ap`el 'steal'); AA *xp' 'id'; Kartv. *qVp- 'id'; Altaic *ab/pu- 'id'.
14. **xuj[a] 'life' > IE *Xwi- (Ht. ḫui-s-, ḫui-t- 'live'); AA *ḫwj 'live'; Turkic (Yakut uja- /uja- 'age, man's life, generation, kin'); Tungus *uje 'age, man's life, generation'; Mongolian *uje 'joint, kin, age'; Dravidian *uj[e] 'live'.
15. **[x]ujV 'I' > IE (Ht. -ḫḫi 'ending of 1st sg., ḫi- conjugation', Luwian -ḫḫa 'ending of 1st ps., past tense'); Kartvelian *x-w- 'prefix of 1st ps. subject'.
16. **9[a]rHV 'crush' > IE *γarH- 'crush, break apart' (Ht. ḫarra- 'break in small pieces, tear apart', Luw. ḫarra- ?'mill', Arm. araur 'plough'; AA (Akkad. hararu 'id'); Kartvelian *γ[a]rγ - 'grind (get coarse-ground flour)'; ?Tungus *ara- 'grain, bran'.
17. **9ujru or **9uwr[u] 'flow, a liquid' > IE *γaur-, *γwar- > *γwer-, *γur- 'water, river, rain' (Luw. ḫurammi- 'irrigated'); AA *γwr 'get wet, wet lowland, lake' (Arab. γwr 'water, be absorbed', Somali hur 'lake'); Kartvelian *γwar- 'flow, pour, get wet'.
18. **γark'a or **γarq'a 'keep, prevent' > IE *γark-/*γrak- (> *γrek- (Ht. ḫar(k)- 'have, hold', Arm. argel 'obstacle, impediment'); AA *ʕrk' 'impede, prevent'; ?Turkic *ark'an 'lasso'.
19. **γUc'HA 'bone' > IE *γost(H)- 'id' (Gk. osteon, Lat. os, OI. asth-i, Ht. ḫastai- 'bone', Arm. os-k-r 'id'); AA *ʕs 'bone, cartilage' (S. Cushitic *ʕoc- 'cheekbone').
20. **diʕu 'put' > IE *deHw- (Ht. tāi-/tija, Luw. tuwa-); AA *wdʕ(j)/*dʕ; Kart. *dw-/*d-.
21. **ʔeqLu 'to shine' > IE *seXwel- > IE *saXwel- or *saX^{w}el- 'sun, luminary' (Luw. sēḫw- 'lamp'; AA: Sem. *sxl 'make transparent'; Ur. *jeLa- or *jēLa 'to shine, daylight', etc.
22. **p'iγwe 'fire' > IE *paXwōr or *paX ōr (Ht. paḫḫuwar); AA. *pʕw id.; Ur. *pīwe 'warm, hot' etc.

E.

I-E	A-A	Krt		Nostratic
T	T'	T'	<	T'
D	T	T	<	T
Dh	D	D	<	D

F.

I-E	A-A	Krt		Nostratic		IE per Bomhard
T	T'	T'	<	T'	>	T'
T'	T	T	<	T	>	T
D	D	D	<	D	>	D

G.
PIE "*g[h]ait'-" < PS *gadj- 'kid, small goat'
PIE "*k'^{w}ern-" 'millstone' < PS *gurn- 'threshing floor'
PIE "*t'ap[h]" 'sacrafice, offering' < PS *-dabḫ-
PIE "*k'^{w}ou-" 'bull, cow' : PS-Sumerian: Eg. n-g;w 'bull', Sum. gu, gud 'id'
PIE "*ak'ro-" 'field' : Sum. [agar]
PIE "q[h]e/op[h]-" 'ape' : Heb. k'op̄ etc. (PS *k')
PIE "*p[h]eleḱ[h]u-" 'axe' : PS *plk'
PIE "*ḱ[h]r̥-n-" 'horn' : PS *k'arn-
PIE "*d[h]" ("*Hand[h]-" 'a type of edible plant' : PS *ḫint'-).
H.
IE *iuk'-om 'yoke' : K *uγ-el- 'id'.
IE (dial.) *t'ig[h]- 'she-goat' : K *dqa- 'id'.
IE *k'(e)n- 'know' : K *g(e)n- 'hear, understand, realize'
K *gon- 'think, recollect'.
IE *k[h]ert'- 'heart' : K *m̥-k'erd- 'chest'.
IE *ḱ'eb[h]-/*ḱ'ep[h]- 'jaw, mouth; eat', nasalized in *ḱ'emb[h]-, *ḱ'omb[h]-) : K *k'b-en-/*k'b-in- 'bite', *k'b-il- 'tooth'.
IE *ma/ot[h]- 'biting insect; worm' : K *mat'l̥- 'worm'.
IE *k[h]erp[h]- 'gather (harvest, fruits)' : K *k'rep- 'pick', *k'reb-/k'erb-/*k'r̥b- 'gather, get ready'.
IE *ś^{w}eḱ[h]s- '6' : K: Georgian ekws- 'id'.
IE *oḱ[h]t[h](o)- 'four fingers' : K *(o)śtx(o)- '4'.
IE *tep- 'warm' (*t[h]ep[h]-) : K *t'ep- 'to warm (oneself)'.
IE *d[h]eǵ[h]-om- 'earth' : K *diqa 'clay'.
IE *d[h]eH- 'put' : K *d(e)w- 'lie, put'.
IE *leg[h]- 'lie' : K *l(a)g- 'put; plant'.
IE *d[h]en- 'run (water)' : K *de/in- 'run (water)', *dn̥- 'melt'.
IE *omb[h]- 'navel' : K *up'e/*op'a 'id'.
IE *b[h]el- 'blow, inflate' : K ber- 'id'.
IE *b[h]erǵ[h]-/*b[h]r̥ǵ[h]- 'high, tall, big, strong' : K *br̥g- 'firm, strong, tall, large'.

THE RED MARBLES OF PHONOLOGICAL AND SEMANTIC STABILITY THROUGH THE AGES

Mary Key

From every continent in the world examples of similar linguistic forms are drawn together to illustrate the perseverance of sound and meaning throughout the ages. The elements, whether phonological or semantic, proceed throughout the centuries in an orderly and systematic way. This can be seen in the way sounds that perseverate relate to each other. For example, if p has a relationship with m, then it is likely that another in the stop series will have a relationship with a nasal, such as k with ŋ. Another example: if b relates to mb, then it is likely that d relates to nd, and so on.

I believe that a semantic framework will also show how elements of meaning are seen to be related to each other. The theoretical framework that I am suggesting would show that meanings have to be connected to each other in a systematic way, even though the examples may not be readily seen, as they are in phonology. The semantic elements rise out of the perceptions of human beings: shapes, configurations, proportions, colors, and such. These, in turn are related to function and need of the human being moving through space and time. The results are lexical items which are being identified in languages of the world. I use a parable to discuss these stable elements, calling them the "red marbles".

IMPLICATIONS OF THE NATURE OF LANGUAGE FOR LONG-RANGE GENETIC CLASSIFICATION

Sydney Lamb

Genetic classification of languages usually follows the family tree theory, despite its known weaknesses. Yet some findings in long-range comparison, like those we see in dialect areas, would be better treated by a theory that would allow chain relationships.

Less recognized is the fact that genetic classification also implicitly assumes another theory, namely that there are such things as languages, as identifiable units that can be classified. Perhaps generally considered too obviously correct to call into question, this covert theory actually does have weaknesses. It is largely an illusion resulting from quantitative factors which work together in macroscopic treatments. There are two such quantitative factors, both involving very large numbers in the typical modern case: (1) Languages usually have very large numbers of speakers; (2) What we call a language is, for any individual speaker, a system consisting of a very large number of interconnected sign-like units, for which the term 'nection' has been proposed (Lamb 1984, 1987). This system, however, has no boundaries separating it from other cognitive systems, and it is both fluid in the individual and variable among individuals.

What comparative linguistics generally works with are nections of a very durable type, namely basic vocabulary items, and the assumption is made that a collection of such basic signs is associated with the elusive object called a language. The reality, however, is the individual collection of signs, not the elusive conglomerate called a language. The latter is a collection of varying individual cognitive systems each of which is a fluid collection of nections.

Both of these quantities, commonly very large in the modern world, may have been much smaller in earlier periods during the past hundred thousand years: (1) much smaller speech communities, (2) "languages" with smaller numbers of signs. Under such conditions the phenomena of language spread, diversification, and diffusion, together with the possibility of "language" mixture, may have been quite different from those observed when the two quantities are very large.

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EAST-NOSTRATIC: ALTAIC AND DRAVIDIAN

Karl Menges

Most comparative historical research into cognates starts with lexical material and neglects other domains of language. Naturally , it is the entire word with which the explorer of little-known or unknown languages is confronted first; thus, the basic works concerning the relationship of languages are founded upon lexical material. But this approach can be very elusive, as shown by the evidence of New English, Osman-Turkish, Malay, Korean, Japanese, Annamite, and a number of other languages. With the progress of time and research, it has become evident that phonological and grammatical facts are of no lesser significance. In a similar way, with some variation, phonology and syntax are open to influences from outside--although to a lesser degree than the lexical stock.

Most resistant against foreign influences is always morphology. Morphological resistance is recognizable even in languages which have lost their morphology to a considerable degree--e.g. New English--and can probably be considered a language universal. Thus, parallels or even identical features, including **prae-**, **in-**, and suffixes, are the very fundamentals of genetic relationships among languages. The applicability of such features may diminish in instances of greatly disturbed linguistic development caused by migrations, conquests, ethnic mixture or absorption, or political repression, and in instances of temporary makeshift communication such as pidgins, creoles, and the like, which are mostly isolated, local, transient phenomena.

Of the three Outer Altaic language families--Korean, Japanese, and Ryukyu--Korean, in contradistinction to the others, poses a number of problems which must be due to the presence of sub- and adstrata indigenous to the Korean Peninsula. Of the non-Altaic languages still extant in that area, Nivx (Giljak) and Ainu, in their earlier stages, are to

be considered possible and probable substrata (Ainu also of Japanese). But there must have been other languages which exerted an influence on Korean, spoken by some of the then numerous "barbarian" tribes mentioned in Chinese historical sources. Unfortunately, these sources do not mention any of the titles used by native chieftains, as is often done with regard to various Altaic tribes.

The same problems arise in the research of the Tungus languages of East Siberia, where ancient contacts with Chukchi-Kamchadals are to be expected in the entire lower Amur Basin. This area had probably been, before the Altaic expansion to Northeast Asia, the roaming ground of proto-Chukchi-Kamchadals, i.e. the peoples who later receded to extreme Northeast Asia, where they occupied great parts of the Chukchi Peninsula and Kamchatka, in close proximity to the Eskimos. The Chukchi-Kamchadal languages have some features in common with languages of North America, and not only those of the Northwest. Vasilevic and Cincius now and then cite Chukchi lexical parallels, as they had postulated some ancient contacts of Tungus with Chukchi. On the subject of sub- and adstrata in Tungus, one may assume the existence of some pre-Altaic peoples, of unknown origin and affiliations, who had lived in the vast Lena-Aldan Plains. However, their influence upon Altaic (as well as Turkic and Mongolian) cannot be as yet, if ever, clearly determined, for we are still far from any definite classification of non-Altaic elements, lexical or otherwise, in the various Altaic families. We may say the same for Turkic, not to mention historically undocumented Altaic languages. Because of the vast expansion of Altaic over Eurasia, from Northeast Siberia as far west as deep into Eastern Europe, the lexical material of Altaic has been thickly interspersed with non-Altaic elements.

In Dravidian, the situation is very similar to that in Altaic. Of the non-Dravidian elements, only those of Indo-European are clearly recognizable, but, even here, cases occur in which it is not clear whether

the matter is one of borrowing or genetic relationship. The Dravidian languages are, with few exceptions, not considered genetically related to Indo-European, and many Dravidologists give no serious thought to the possibility of genetic relationships with other language families, not even Altaic or Uralic. This attitude persists in spite of the fact that Caldwell, the first great explorer of Dravidian, had, in his "Comparative Grammar," repeatedly drawn parallels with Uralic and Altaic (called by him "Scythian") which are still valid today. Dravidian was later compared with Uralic (by O. Schrader), Hungarian (Hevesy), Uralo-Altaic (Bouda), Basque (Lahovary), African languages (Pöl with Telugu, by Homburger), again Uralic (Tyler), Japanese (Tamil and Japanese only, by Ono), and, finally, Elamite (McAlpin).

If one takes into consideration the Dravido-Altaic relationship, a number of Dravidian problems appear in a different light and become resolved. One is the problem of Brahui and the migration of the proto-Dravidians to the Subcontinent, which leads to certain conclusions concerning the other language families of India, Munda and Sino-Tibetan (Tibeto-Burmese), as well as the distribution of the peoples of western Asia. The participial and gerundial constructions of Dravidian become transparent when compared with their equivalents in Altaic. The Dravidian influence on the morphology, and even more notably the syntax, of Indo-Aryan, is matched by the influence of Altaic on the morphology and syntax of Slavic (probably even of Balto-Slavic), particularly Old Bulgarian and Old Russian. In all of these areas one finds features exhibiting genetic relationship, particularly in the morphology of the noun and the nominal forms of the verb--with etymologically identical suffixes of case and number--and in the pronoun. In the latter, however, possessive suffixation had apparently never developed in Dravidian (as opposed to Uralic and Altaic), or had been lost in Altaic, whose three Outer Languages do not seem ever to have had possessive suffixation.

The East Nostratic unity of Uralic, Altaic, and Dravidian has become clearly recognizable. These languages form a closely bound entity, related in turn to West Nostratic, Indo-European, Kartvelian, and Afro-Asiatic. At the present stage of research, no other languages can be classified with East Nostratic. While Jukagir is probably an ancient offshoot of Uralic, Chukchi-Kamchadal is not a Uralic language, though it shows some related features. It remains to be seen whether it, along with Eskimo-Aleut, might be viewed in terms of a more remote genetic relationship with East Nostratic. On the other hand, Languages such as Ainu, Gilyak, Jenisejic, Nahali (in central India) and Burushaski (in the Hunza-Nagar District, W. Himalayas) cannot be included in Nostratic. This conclusion, I think, is likewise valid for Elamite, Sumerian, Northwest and Northeast Caucasian, and the ancient Caucaso-Mediterranean (Paleo-European) languages, of which Basque is the sole survivor.

I do not feel competent to judge the situation of Afro-Asiatic, which has extended far into Central Africa. Within this large family, I am amazed at both the quantity and quality of features of genetic relationship with other families, which would rather warrant the maintenance of Afro-Asiatic within West Nostratic or, at least, Nostratic.

EYAK-ATHAPASCAN - NORTH CAUCASIAN SOUND CORRESPONDENCES

Sergei Nikolaev

[Nikolaev has "added" the Na-Dene (Eyak-Athapascan) languages to the Sino-Caucasian phylum which, according to Starostin, consists of North-Caucasian, Yeniseian and Sino-Tibetan languages. The data below are some examples from Nikolaev's paper entitled Sino-Caucasian Languages in America. The Eyak-Athapascan (EA) data represent a revised reconstruction by Nikolaev.

Note that the reconstruction by Starostin of North-Caucasian (PNC) consonantism (as presented in his paper Nostratic and Sino-Caucasian, 1988) is less complex than that in the present abstract; see Starostin op.cit. for details. - V.S.]

Regarding Nikolaev's transcription, note the following:

$k_{\circ} = k^{w}$, $X_{\circ} = X^{w}$ etc.

$3_{\circ} = 3^{w}$ etc.

I (= H in Starostin's paper) indicates pharyngalization of the preceding sound

( ) means "might be present"

[ ] indicates a tentative reconstruction

PNC	PEA
b,p	W-
p',w	w
m	w-,m/Ø
d	d
t	t-,d
t'	t'
n	1-//w-,n//m//Ø
c	c-,ʒ
ʒ	s
ʒʒ	c'-/s
c'c'	c'
s,ss	s
c_o	c-
c'_o	(ʒ)
$ʒʒ_o$	c'_o-/s_o-
cc_o	ć-
$c'c'_o$	c'-/s_o-
ʒ́	ʒ- ,-s?
ć'-	c'-(//s)
ć'ć'	c'- (ʒ)
ś	ś-
śś	s
$ć'_o$	L'(//ć'-)
$ćć_o$	-ʒ
$ć'ć'_o$	ł-
$ś_o$	s
ʒ	s-
č'	č' (ʒ)
č'č'	č'/s-
$Z_{(o)}$	s_o-
S_o	s_o-
ź	s-
s,ss	s
č'$č'_o$	-č'
ss$_o$	s
L	-L
L'	L'
LL	L-,ł/L'
L'L'	ł/L'
L	l-
ł	ł-
ł	ł-
LL	-ł
łł	ł-
L'L'	ł
ł	ł-
g	g
k	k-/x-
g_o	g_o
k'(o)	k'(o)(g)
k'k'(o)	k'(o)-
x	g-
xx	x-
G(o)	g(o)-
q	k-/x-
R	g-
q'(o)	k'(o)
GG(o)	g(o)/x
qq	k-/x
q'q'	x
q'q'(o)	k'(o)
X(o),XX(o)	x
?	?

ʔ	k'-,x/ʔ (H)
ʕ	y-/x-
hh	x-,x/ʔ
h	?-/h- (h)
ʔ$_o$	w-,x (h)
ʔ$_o$	-X$_o$ (h)
ʕ$_o$	w-/x
h	-x
l	l-//ǯ-,l//Ø
l̲	ɬ
r	d-,e//Ø//n?
u̯	w-
y	y-//ʔ-,y

PNa-DENE/EA	PNC
*k$_o$Vh(M)d 'lip'	*k'$_o$ēmt'V̄
*ćālm 'stomach, belly, womb'	*cc$_o$äymi 'gall liver'
*č'iyVk' 'guts'	*č'č'āq'q' V
*xēʔ 'grease,oil'	*X$_o$ɬIl(H)i (∿-e-,-l̲-) 'fat, grease'
*ƀax 'grease'	*ƀƀ$_o$ɬm(H)V (∿-ō-)
*k'ūmʔ 'fish-eggs; kidney'	*k'k'əmbV 'kidney'
*kahL 'skin, bark'	*qqăLV (∿-ƀ-)
*guʔ(n)d 'knee'	*q'$_o$əIntV (∿q'q'$_o$-) 'knee, elbow'
*c'em(ʔ) 'leg, bone'	*yĕc'c'$_o$ĕmV
*deɬ 'blood'	*räL'L'ɬ̆ 'meat'
*t'ā̆(n)h 'feather'	*t'īʔīmV 'feather, wing'
*c'ēk' 'navel'	*c'onk'V (∿-g-)
*q'ēMgš 'gristle'	*q'amq'ašV (q'q'-)
*gān 'arm'	*GG$_o$ɬInV / *nɬIGG$_o$V
*č'$_o$iy 'woman'	*ǯǯ$_o$[i]yV
*lah3 (∿-ē-) 'father-in-law// son-in-law'	*nɬwq$_{(o)}$V 'son-in-law; husband'
*ɬĭnh 'woman, wife'	*ɬɬnhV
*gVǯ 'dog, wolf'	*g$_o$aǯē

THE LINGUISTIC SITUATION IN SOUTHEAST ASIA

Ilya Peiros

The present summary contains information about research done by the author (including that effectuated in cooperation with other scholars) in the field of comparative-historical study of the East and Southeast Asian language families. Such a compilation is justified by the fact that our publication process is very slow; consequently, the results obtained ten to twelve years ago are still "forthcoming".

Specific problems of comparative studies in the outlined area arise from the lack of primary reconstructions, which is caused in turn by a shortage of data available. Therefore, one must limit oneself to the data of living languages in order to reconstruct a family proto-language, rather than using a methodically more preferable step-by-step procedure. Of course, such a palliative method is much more risky.

In order to make one's way through a great number of languages, one must use lexicostatistics with only a rather vague idea of phonemic correspondences between the languages under comparison. For this reason, the following results are of a quite preliminary character.

1. Austro-Asiatic and Austro-Tai

The most general classification of Austro-Asiatic (AA) distinguishes five main branches: Mon-Khmer, Munda, Khasi, Nicobar, and Aslian. The status of the last is quite uncertain, however, since almost no data are available to me. My main efforts have been applied to Mon-Khmer (MK), since there are far from sufficient data for reconstructing Munda (Pinnow's work is obsolete) and Nicobar.

A direct comparison of Khmer, Mon, Chrau, Vietnamese, and Wa has resulted in a copious Mon-Khmer lexicon which also includes known AA parallels. The Vietnamese and Wa data have been checked against, and

partially include, the late Natal'ja Sokolovskaja's Proto-Viet-Muong and my own Proto-Wa reconstructions. The above lexicon has become a base for a working version of Mon-Khmer comparative phonology.

New Chinese cources have made it possible to reconstruct Proto-Miao and Proto-Yao and, as a further step, a common Proto-Miao-Yao. The 300 roots of the latter obtained so far have been compared with the Proto-MK lexicon and AA data. These comparisons have corroborated the hypothesis of remote genetic relations between these language groups. Miao-Yao should not, to my mind, be directly included in AA; it is rather one of two taxonomically similar branches of a postulated Miao-Austro-Asiatic family.

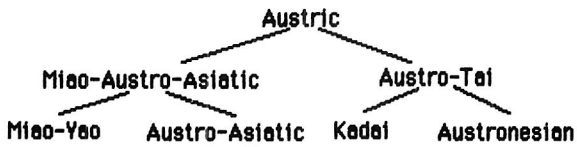
Regarding Austronesian (AN), there is a continual problem of classification. Recent lexicostatistical study by the author points to a concentration of main AN branches in West Austronesia: the distance between Malayan, Tagalog, and Maanjan is the same as, say, that between any of them and Tongan or Tsou. Another current hypothesis, that of an early separation of Taiwan groups from the AN stock, has proved invalid. The only phonetic argument for this hypothesis--namely that of independent *t and *c, and several *s and *h--has no value, since the difference between the above phonemes is accounted for by ancient accentuation.

The methodically correct reconstruction of Proto-Kadai (PK) has become possible thanks to recent publications by Chinese linguists. Proto-Li and Proto-Kam-Sui reconstructions have been carried out in the manner of the Chuang-Tai reconstruction by Li Fang Kuei. All three, compared with Ong Be and Lakkia data, have given rise to a small PK cmparative lexicon with a detailed phonetic reconstruction. Only the Kelao group (or groups) has been excluded from comparison, because the available data are difficult to interpret.

The comparison of the PK lexicon (reconstructed by the author) with

the PAN lexicon has corroborated P. Benedict's Austro-Tai theory. I estimate that 100 cognates in the basic lexicon out of Benedict's list can be accepted, though phonetic correspondences have not yet been fully established.

Recently, many basic MK-AN cognates have been discovered. Some of the MK roots reveal AA or Miao-AA origin, while AN roots reveal AT origin. These data support the idea of genetic unity postulated by W. Schmidt. The Austric macro-family may be provisionally represented as follows:



The boundaries and external relations of this macro-family have yet to be investigated.

II. Sino-Tibetan

S. Starostin's study (forthcoming) of Chinese historical phonology has paved the way toward deeper insights into Sino-Tibetan (ST). An ST comparative dictionary, based on a direct and comprehensive comparison of Chinese, Tibetan, Burmese, Lushai, and Kachin, has been compiled by Starostin and the author. The dictionary, comprised of about 1800 roots, is the source of a provisional ST comparative phonology which also includes the results of single-group reconstructions, namely East Himalayan (Starostin), Lolo-Burmese, Karenic, and Gurung.

The same authors have developed a lexicostatistical classification of ST differing notably from the traditional schemes of R. Shafer and P. Benedict. According to the new view, the ST proto-language disintegrated into no fewer than fifteen independent dialects: Tibeto-Burmese, Gurung,

East Himalayan, Bodo-Garo, Abor, Lepcha, Newari, Kachin, Kanauri, et al. Chinese was one of these dialects, while Karenic was part of Tibeto-Burmese.

Starostin's discovery of the Sino-Caucasian macro-family made it possible to define the external genetic links of ST and to seek the home of Proto-ST farther west. The fact that most of the independent branches of ST are located in the foothills of the Himalayas makes this area a tenable site of the Proto-ST home before its disintegration. If this area is the true site, then it was only Chinese and some Tibeto-Burmese and Kachin languages that ever proceeded eastward.

One of these languages, possibly Proto-Chinese, later came into contact with PAN, which resulted in ST borrowings in PAN and AN borrowings in Chinese (see Pejros, Starostin 1984). It is interesting that the cultural impact was directed mainly from ST to AN. We also know of some borrowings (e.g. numerals) from ST to Proto-MY. Kadai's contact with ST began relatively late: Chinese influence upon these languages can be traced to a point no earlier than the first millennium A.D.

ST languages seem to have been spread through a much wider territory in South Asia than they are now. This idea is corroborated by ST borrowings in South-Central Dravidian, the home of which was presumably located in Central India (Pejros, Shnirelman forthcoming).

A problem to consider in the near future is that of ST contacts with Burushaski, which I favor including within Sino-Caucasian. These contacts were rather intensive and close, according to the data at hand.

TOWARD AN UNDERSTANDING OF PROTO-DRAVIDIAN PREHISTORY

Ilya Peiros and Viktor Shnirelman

Modern Dravidian languages are widespread in South Asia from Pakistan to Eastern India. The Proto-Dravidian language split c. 3000 B.C. into two or three branches: Proto-Central-Southern (an ancestor of the majority of modern Dravidian languages), Proto-Northeastern (an ancestor of Kurukh and Malto) and, probably, Proto-Northwestern (Brahui). The Proto-Central-Southern branch, in its turn, split c. 2000 B.C.

The Nostratic ancestry of the Dravidian languages, and specific Elamo-Dravidian connections, lead us to suppose that the Proto-Dravidian language could have entered South Asia only from the west. Its dispersal may have occurred in South Asia during the fourth to second millennia B.C.

The standard linguo-archeological procedure helps us to locate a Proto-Central-Southern Dravidian (PCSD) homeland and to characterize some of its cultural features.

According to the reconstructed floristic and faunistic PCSD lexicon, the PCSD homeland may be localized in some area of dry deciduous tropical forest in North, Central, or Southern India. The borders of this vast area have remained essentially unchanged during the last 5000 years.

The PCSD peoples cultivated plants of three rather different varieties. There were terms in Proto-Dravidian (and hence also in PCSD) for some cultivated cereals, apparently wheat and/or barley. These cereals originated from the Middle East, where their growth depended on winter rains. The other PCSD cultivated plants were adapted to summer rains. They were both native Indian (rice, black/green gram, horse gram, and seasam) and African (millet and possibly sorghum). An accurate localization of the origin of this multi-component South Asian agriculture could also help us to find the PCSD homeland.

Recent archeological evidence shows that the expansion of rice

cultivation occurred in North and West India in a westward direction during the late third and second millennia B.C. Meanwhile, African sorghum and millet crossed the western border of South Asia well into the late third millennium B.C.

According to paleo-botanical mapping, the South Asian areas of dry deciduous tropical forest in which the wheat and barley agriculture was supplemented by rice, sorghum, and millet c. 2000 B.C. were limited to Saurashtra, Southwest Rajasthan, and, probably, Western Madhya Pradesh. Therefore, we advance the hypothesis that the PCSD homeland was located just in these regions. This argument is strengthened by the temporal coincidence of the PCSD term for "plow" and the appearance of plows in West India in the late third millennium B.C.

The PCSD peoples practiced pastoralism, as well as agriculture: they kept cattle, pigs, sheep, goats, and dogs. On this point, linguistic information corresponds strongly to paleo-zoological data of Northwest South Asia during the third and early second millennia B.C.

Regarding external PCSD relationships, we must mention contacts with a group of Sino-Tibetan speakers, from whom the PCSD peoples borrowed some terms, including the one for "rice". We can with confidence assume that these contacts were specific to PCSD; they were not established for Proto-Dravidian. It is also important to note that the PCSD lexicon contained no Indo-Aryan loan words.

In conclusion, we may assume that the PCSD homeland designated here coincides with the territory in which the well-known Chalcolithic cultures such as Kayatha, Ahar, etc. emerged. According to archeological data, there existed a homogeneous cultural entity in Southeast Rajasthan, Eastern Gujarat, and Western Madhya Pradesh c. 2000 B.C. This territory was a point of agricultural expansion both eastward (up the Narmada River) and southward (to Western Maharashtra) during the second millennium B.C. These facts correspond to linguistic data.

INDO-EUROPEAN AND SUBSTRATE LANGUAGES IN THE WEST

Edgar Polomé

Whatever position one adopts as to the Indo-Europeanization of Western Europe, it is obvious that the speakers of early Indo-European responsible for it did not operate in a vacuum. It stands to reason that elements of the languages spoken by the prior populations of the territories belonging later to the Western European linguistic community have survived in the Indo-European dialects that developed in the same areas. The problem is to establish how much can actually be retrieved of these substrate languages and how many of them were involved in the process. While a number of Italian linguists, in particular, advance the hypothesis of a Mediterranean substrate, which, for some, would reach eastwards as far as India or northwards up to the Baltic coast, a number of similar ideas have been advanced to account for the aberrant developments in Insular Celtic or the idiosyncrasies of Proto-Germanic. What is the validity of these earlier views, which are based essentially on lexical comparisons, but which make claims to account as well for features in phonology, morphology, and syntax?

Progress in socio-linguistics and in the study of languages in contact, a better understanding of the processes of pidginization and creolization, and a deeper insight into the mechanisms of language change with due regard to its cultural correlates, enable us now to form a clearer picture of what may have happened during the period of progressive Indo-Europeanization.

Taking these facts into consideration, it is rather unlikely, for example, that the major changes that deeply affected the Northwestern Indo-European dialects from which Celtic and Germanic sprung in the first millennium B.C., could in any *direct* way be ascribed to "substrate" influence or close contact with non-Indo-European populations. On the

other hand, it is obvious that the vocabulary of the languages of Northern Europe contains a sizable number of specific common terms relating to the ecology of the area and to the archaic civilization of the original inhabitants of the Baltic coastal lands. As these words usually have no plausible Indo-European etymology, they probably reflect the names given to the relevant objects in the language(s) of the earlier population of the territory. But, as very old borrowings generally are, the terms have been formally so well integrated into the phonology and morphology of the recipient Indo-European dialects that it would be most speculative to venture to derive conclusions from them regarding the phonological and morphological structure of the "substrate" language(s). Isolated features might be identified, e.g. the back low mid-vowel posited by Eric Hamp on the basis of terms such as the word for "apple", but this is about as far as one can go under the present circumstances.

THE ORIGIN OF ASIAN POPULATIONS

Geoffrey Pope

Two opposing models have been proposed to account for the origin of modern Asians. One ,the replacement model argues that modern Asian populations descend from a small population that migrated from Africa relatively recently (within the last few hundred thousand years). In this interpretation populations of Homo erectus were replaced everywhere by invading populations of anatomicaly modern Homo sapiens . Some workers have strongly suggested that Middle Pleistocene hominids lacked the capacity for complex culture and that the absence of patterning in the archeological record and perhaps even the complete absence of stone tools (in Southeast Asia) supports this interpretation. In contrast to this model, a model of regional continuity maintains that Homo erectus populations show a consistent suite of morphological traits through time which are shared with modern Asian populations which descend form Homo erectus. Furthermore, the percieved evidence for minimal cultural capacities in Homo erectus populations is based on highly questionable interpretations which do not accurately reflect archeological and paleoenvironmental data from Asia. Although replacement models must postulate some kind of adaptive superiority for invading populations, the paleontological and archeological records in Asia do not suggest the sudden influx of superior technologies or cultural capacities.

NOSTRATIC-AMERIND COGNATES

Merritt Ruhlen

[Despite the fact that the Amerind proto-language (comprising most American Indian languages except Na-Dene and Eskimo-Aleutian) is not yet properly reconstructed, Ruhlen's comparisons of Amerind and Nostratic deserve close attention. Preliminary Amerind reconstructions are based on Greenberg's sets as given in his book Language in the Americas (Stanford 1987). Ruhlen reconstructs proto-Amerind forms based on phonetic archaisms which are projected on the level of the proto-language (despite the lack of reconstructions of very many "intermediary" proto-languages). Therefore, for example, Ruhlen considers glottalized consonants - well-preserved in Northern Amerind languages, but absent in Southern Amerind - to be archaisms opposed to non-glottalized consonants, etc.

Still, a rather complex set of Amerind consonants is not reflected in Ruhlen's Amerind transcription. In fact, he only deals with types of phonemes. For instance, his k' represents either $k^{\text{'}}$ or $q^{\text{'}}$ (or a situation where it is unclear what we actually have: k' or q') while k represents k, k^{h}, q or q^{h}, etc. Note also that Amerind had a complex subsystem of affricates (which included laterals), as is apparent from archaic North Amerind languages such as Hokan or Penutian (reconstructions have not yet been published).

There are, however, many sets in Amerind which show the underlying proto-Amerind roots rather clearly (cf., for instance, #40 *tik- 'finger, one', #41 *ja?- 'go, come').

Impressive is the comparison of easily reconstructable pronouns, particles and other grammatical elements (sets 1-16) and their unmistakable identity with Nostr. counterparts. Note that a comparative list of

grammatical elements compiled by Starostin (Nostr. versus Sino-Caucasian) contains a similar number of items (22). Nostr. data used by Starostin coincide, by and large, with the data used by Ruhlen.

In some cases, additional data show an even closer similarity between Nostratic and Amerind than reconstructions cited by Ruhlen. For instance, the Nostratic forms for 'who' (see set 7) should be *Ḳ̇ajV ~ *Ḳ̇awV (Ḳ̇ = K', i.e. " *k' or *q' "), as shown by Starostin in his book on Altaic (forthcoming in Moscow). Amerind seems to have similar forms, cf. E. Pomo kia which could originate from *KajV; Alsea qau < *QawV, etc. Note that the variation *k'V ~ *kV in Amerind resembles the variation in this pronoun in Afro-Asiatic. (Deglottalization in pronouns is a rather regular process; cf. also Ruhlen's set 3: Nostr. *ṭ̇ä ~ Amer. *ta/i).

Regarding set 16: "Eurasiatic" [= Nostratic] *ku ~ *ko 'this' should rather be *ḳ̇ä (Altaic *k'ä and weakened *kä, IE *ḱe and derivative *ḱo; IE *ḱ < Nostr. *ḳ̇ before *ä/e/i). This is very close to Amerind *ki (weakened form of *k'i?).

Nostr. *Homsa 'meat' (set 21) might contain an archaic prefix *Ho- (when based on Starostin's comparison with Sino-Caucasian). If it is so, the actual Nostr. root *-msa is closer to Amer. *maci (or *mac'i).

The Amer. word for 'boy' (set 24) might contain an intervocalic affricate of the type C; cf. Nostr. *ḳ̇aćV.

Set 26 (Nostr. *šingV 'snow' = Am. *canik 'cold (weather)' [c = t^s]) seems doubtful. There is, actually, only one phoneme (n) identical in both roots. Semantic correspondence seems to lack either. In individual Nostr. languages the root *šingV clearly designates substance (hoarfrost; crust; mud; oil; etc.) and seems to have nothing in common with the meaning 'cold'.

Nostr. *Ḳ̇ä/lH/ä 'tongue' (set 28) seems to be different from Amerind *k^wa/el 'say', or rather *q^wa/eɬ (ɬ is preserved in Penutian). Cf. Salishan *q^wəl Chukchi-Kamchatkan quli 'speak' (Mudrak). Nevertheless, the North-Caucasian parallel (*g^{w}Vl- 'speak') to our Nostr. root, proposed by Starostin,

confirms the possibility of Ruhlen's comparisons. I still doubt the Nostr. connection.

The reconstruction of the Amer. root for 'give' (set 29) should be, it seems, *tu?/*to?, not *atu/o (*a- seems to be a prefix, as in many other similar cases). If so, the Amer. root is much closer to Nostr. *to/H/V.

The Nostr. word for 'wolf, dog' should be *ḳ̣ üjnA (*ḳ̣ is preserved in Kartv. *-ḳ̣ na 'dog'). The Amerind word seems to be *k'ujan, not *k'uan (-j- appears in many Amerind languages; see Ruhlen's set 35). It is very close to Nostratic.

As for set 34, the Amer. root should be *k'[e]m[o], not *kemo. Nootka has k' (in k'ima-k'ima 'steal'), and initial glottalized consonants in North Amerind usually preserve the Proto-Amerind glottalization.

The Amerind word for 'woman' (set 36) should be *kuni (cf. Kamayura kunja, etc.). The Nostr. word, according to Dolgopolsky, is *kuni 'woman' (not 'wife, woman'). So the Nostr. and Amerind words are identical both phonetically and semantically.

Set 40: Under "Eurasiatic *tik" several IE roots are mixed together.

Set 45: According to Starostin, the Nostr. word for 'fire' was *Xoṭi.

Set 48: The Nostr. root for 'water' should be *ʕaḳ̣u, not *ʕeḳ̣u (*-e- is present in a different root, with *-g- , meaning 'drink', as in Hittite eku-).

Set 50: There are grounds for reconstructing a glottalized -t'- in the Amer. word for 'cut'. - V.S.]

1. NOSTRATIC **mi* 'I' **mä* 'we inc.,' Chukchi *-m* 'let us' = AMERIND **ma* 'I, we, we inc.,' Yokuts *ma-k'* 'we 2 inc.,' *ma-i* 'we inc.,' Yuki *mī* 'we inc.,' Cuitlatec *mimi* 'I,' *-mi* 'my,' Chimu *moiñ* 'I,' *maiño* 'my,' *mæ-ič* 'we,' Kaliana *mē(-be)* 'I.' [N I:6; G 3]

2. NOSTRATIC **na* 'we ex.' = AMERIND **na* 'I, we, we ex.,' Proto-Algonquian **ne-* 'I,' Nootka *newa* 'we,' Tsimshian *n-* 'I,' Siuslaw *na* 'I,' Yokuts *na?* 'I,' Huave *-na-* 'I,' Karok *na* 'I,' Comecrudo *na* 'I,' Proto-Aztec-Tanoan **ne?* 'I,' Kiowa *nā* 'I, we,' Mixtec *n-* 'I, we ex.,' Cuna *an* 'I,' Move *nu* 'we,' Rama *na* 'I,' Xinca *ni* 'I,' Timucua *ni-* 'I,' Bintucua *nan* 'I,' Guambiana *na* 'I,' Mataco *no-* 'my,' *na-* 'our ex.,' Proto-Panoan **no* 'we,' Jaqaru *na-* 'I.' [N I:7; G 1]

3. NOSTRATIC **ṭä* 'this, that' = AMERIND **ta* ~ **ti* 'this, that, he*, stage III article,' Chumash *t-* (stage III article), Proto-Algonquian **-t-* (fossilized article linking personal pronouns and vowel stems), Subtiaba *d-* (stage III article), Proto-Mayan **t-* 'he,' Yupua *ti* 'this,' Tucano *toho* 'that,' Ona *ta* 'he, they,' Lule *tita* 'he,' *te* 'this,' Mataco *ta* 'that,' Cherente *ta* 'he,' Caraja *ti* 'he.' [N I:7; G 13]

4. NOSTRATIC **ʔi* 'this, he' = AMERIND **(ʔ)i* 'he, this, the,' Chinantec *ʔi* 'he,' Tewa *ʔi?* 'he,' Mono *ʔi-hi* 'this,' Borunca *i* ~ *iæ* 'he,' *j-* 'his,' Lenca *i(-na)* 'he,' *i-* (indef. obj.), Cuna *i-* (indef. obj.), Bribri *i-* (indef. obj.), Chiquito *i-* 'his,' Kraho *iʔ-* 'his,' Guarani *i-* 'he, his.' [N I:8; G 12]

5. NOSTRATIC **mu* ~ **mo* 'this, he, other' = AMERIND **mo* 'that, he, the,' Maidu *mi* 'he,' *mō* 'that one,' *mi* 'this, that,' Atakapa *ma* 'that,' Proto-Algic **m-* (impersonal possessor), Proto-Uto-Aztecan **mo-* 'himself,' Taos *mo-* 'himself,' Guarani *amo* 'that,' Arara *mo* 'he,' Barama *mo(-ko)* 'he, she,' *mo(-ro)* 'it,' Waiwai *moro* 'that one,' Moseten *mo* 'that, he,' Chama *ma-* 'that,' Northern Cayapo *amu* 'he,' Guato *ma-* (stage III article). [N 303; G 14]

6. NOSTRATIC **NA* 'this, that, he' = AMERIND **na* ~ **ni* 'this, that, he, here,' Paez *ana* 'this,' Colorado *ne* 'he,' Choco *nan* 'that,' Yahgan *-n* 'his,' Quechua *-n* 'his,' Kahuapana *nana* 'he,' Amuesha *ña* 'he,' Yuracare *na* 'that, he,' Suya *ni* 'this,' Arazaire *nina* 'here,' Galibi *ini* 'this,' Wayana *ine* 'he.' [N 332; G 15, G 23]

7. NOSTRATIC **Ḳo* ~ **Ḳe* 'who' = AMERIND **k(')V* 'who, what, where,' Tsimshian *gu* 'who,' Alsea *qau* 'who,' Klamath *ka* 'who,' Seri *kiʔ* 'who,' Walapai *ka* 'who,' East Pomo *kia* 'who,' North Pomo *k'o* 'what,' Achomawi *kī* 'who,' Tlappanec *gwana* 'when,' Totoro *kin* 'who,' Yahgan *kunna* 'who,' *kana* 'where,' Mapudungu *kam* 'how,' Aymara *kuna* 'what,' *kamisa* 'how,' Tehuelche *kenaš* 'when.' [N 223, N 232; G 102]

8. NOSTRATIC **mi* 'what' = AMERIND **mi-n* ~ **ma-n* 'who, what, where, when,' Central Sierra Miwok *minni* 'who,' San José *mani* 'where,' Patwin *mena* 'where,' Chickasaw *mano* 'where,' Cayapo *muŋ* 'who,' Guambiana *mu* 'who,' Paez *maneh* 'when,' Allentiac *men* 'who,' Kagaba *mani* 'where,' *mai* 'who,' Matagalpa *man* 'where,' Botocudo *mina* 'who,' Guayaki *ma* 'what,' Guajajara *mɔn* 'who,' Cofan *ma-ñi* 'where,' Maripu *manub* 'in which direction.' [N 300; G 103]

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* As used here, 'he' represents a third-person singular pronoun, without regard to gender.

9. NOSTRATIC *ḲA (lative) = AMERIND *k(')i (allative), Wiyot *ok*^{w} 'in,' Yurok *-ik* 'in,' Seneca *-keh* 'in,' Maidu *-k* 'toward,' Alsea *k-* (locative), Yuki *k'il* 'toward,' Totonac *k-* 'in,' Yana *-ki* 'hither,' Washo *-uk* 'toward,' Atsugewi *-k* (allative), Chimu *-ek* 'to,' Cuna *ki-* 'in, at, by.' [N 245; G 45]

10. NOSTRATIC *na (locative) = AMERIND *na ~ *ni (locative), examples of this affix are seen in (7) and (8) above, in conjunction with the interrogatives *k-* and *m-*, with the resultant meaning of 'where' or 'when.' [N I:11; G 47]

11. NOSTRATIC *da (locative) = AMERIND *te ~ *ta (locative), Maidu *di* 'in,' Klamath *di* 'place of,' Catio *-de* (locative), Move *-te* 'in,' Lule *ta-* 'through, in.' [N 59; G 49]

12. NOSTRATIC *-NA (plural of animate nouns) = AMERIND *na (plural, especially of pronouns and nouns referring to humans), Kagaba *nas-an* 'we' (cf. *nas* 'I'), Lenca *ana-nan* 'they' (cf. *ina* 'he'), Zaparo *ka-na* 'we' (cf. *ka* 'I'), Jebero *-nøn-na* 'their' (cf. -nøn 'his'), Yamana *sa-n* 'you' (cf. *sa* 'thou'), Aguaruna *-na* (plural subj. of a verb), Tiquie *nā* 'they, their,' *na-* (plural of demonstratives and human nouns), Canichana *-na* (plural of human nouns). [N 333; G 30]

13. NOSTRATIC *-ṭA (causative) = AMERIND *t(')u* (causative), Seneca *-ʔt-* (causative), Keres *-tu* (makes actions out of statives), Wiyot *-at* (transitivizer), Salish *-t* (transitivizer), Kutenai *-n't* (action by hand), Kwakiutl *-d* (transitivizer). [N I:13; G 92]

14. NOSTRATIC *-la (collective), Kamchadal *-al* (collective) = AMERIND *-le ~ *-la (plural), Mataco *-el* (plural), Lule *mi-l* 'you' (cf. *mi* 'thou'), *-l* (personal plural, e.g. *kwe-l* 'children'), Mocovi *le-* (plural, cf. *i-tā* 'his father' and *le-tā* 'their father'), Guambiana *-ele* (noun plural), Colorado *-la* (plural of nouns and pronouns), Xinca *-li* (plural of nouns and pronouns), Murire *-re* (pronoun plural), Bribri *-r* (noun plural), Paya *-ri* (plural verb subj.). [N 246; G 33]

15. EURASIATIC *ki (dual), Armenian *-k'* (plural), *me-k'* 'we,' Turkish *iki* '2,' Yukaghir *ki* '2,' Proto-Finno-Ugric *-me-k* 'we' (cf. *-te-k* 'thou'), Hungarian *-k* (plural), Saami *-k* (plural), Ostyak *-k(-an)* (dual), Yenisei Ostyak *k(-an)* ~ *k(-ai)* (dual), Selkup *-qi* (dual), Gilyak *me-gi* 'we 2' (cf. *me-r* 'we inc.'), *-ki* 'and,' Chukchi *-mA-k* 'we,' *-tA-k* 'you' (verb suffixes), Aleut *-k* (dual), Eskimo *-k* (dual), Proto-Eskimo-Aleut *-mi-k* 'we 2,' *-ti-k* 'you 2' = AMERIND *ki* 'we 2 inc.,' Proto-Algonquian *ke-* 'thy,' Potawatomi *kin* 'thou,' *kin-an* 'we inc.' (cf. *nin-an* 'we ex.'), *kin-wa* 'you,' Yurok *-k'* 'I,' Wiyot *-ak* 'I,' Iroquois *k-* 'I,' Wyandot *kj-* 'we 2 inc.,' *kw-* 'we inc.,' Pawnee *k-* 'I,' Yokuts *ma-k'* 'we 2 inc.' (cf. *ma-i* 'we inc.'), Rumsien *ma-k* 'we,' Chitimacha *-ki-* 'me,' Papantla *ki-t* 'I,' *ki-n* 'we,' Maratino *ko* 'we inc.,' Pomo *ke-* 'my,' Karok *ki-n* 'we,' Taos *ki-* 'we,' South Pame *kakh* 'we inc.,' Carib *k-* 'we 2 inc.,' Uitoto *koko* 'we 2,' Cholona *ok* 'I,' *ki-* 'our,' Gennaken *ki-* 'my,' *kia* 'I,' Mayna *-ke* 'let us,' Andoa *kua* 'I,' Zaparo *kui* 'I,' *ko-* 'my,' *ka(-na)* 'we exc.' [EA 14; G 19]

16. EURASIATIC *ku ~ *ko 'this,' Japanese *ko-no* 'this,' Ainu *ku-ri* 'this,' Gilyak *ku* 'that,' Chuvash *ku* 'this,' Southern Uighur *ko* 'this,' Korean *ko* 'that,' Hittite *kā* 'this,' *kūn* 'this' (acc.), *kūs* 'these' (nom./acc.) = AMERIND *ko ~ *ki 'this,' Chumash *kaki* 'this,' Subtiaba *kagi* 'this,' Cochimi *khu* 'this,' Jicaque *kone* 'this,' *kiʔa* 'here,' Auake *kiʔa* 'this,' Guarani *ko* 'this,' Puquina *ko* 'this, that,' Caraja *kua* 'this,' Kamakan *kue* 'that,' Cherente *kua* 'he.' [EA 10; G 22]

17. NOSTRATIC *pučʌ 'body hair, down, feathers' = AMERIND *p'utˡi* 'hair, feather, bird down,' Wappo *pučīš* 'hair,' Yuki *p'oti* 'feather,' Maidu *butu* 'hair,' Yokuts *pada* 'feather,' Tsimshian *p'ʌlk'wa* 'bird down,' Alsea *pʌlupʌlu* 'feather,' Tunica *-puli* 'plummage, hair,' Proto-Uto-Aztecan **po* 'body hair,' Taos *p*^{h}*o* 'hair,' Quechua *p*^{h}*uru* 'feather,' Jebero *ambolu* 'feather,' Tschaahui *amporo* 'crown of feathers,' Campa *biti* 'feather, hair,' Ipurina *piti* 'feather,' Kandoshi *poro* 'hair, feather,' Cayuvava *pote* 'feather,' Yuracare *pusi* 'feather,' Wayana *pot* 'feather,' Yagua *popɛjty* 'feather.' [N I:20; A 108, CA 45, E 42]

18. NOSTRATIC **ńan/g/ʌ* 'tongue' = AMERIND **ñene* 'tongue,' Proto-Uto-Aztecan **neni* 'tongue,' Tucano *nene*, Machiguenga *-nene*, Wapishana *(u-)nenu*, Kariri *ñunu*, Shuara *iñe*, Sabila *nene*, Guarani *ñẽ̄ẽ̄*, Allentiac *nanak*, Millcayac *nanat*. [N I:18; A 256, A 258]

19. NOSTRATIC **ñiĶa* 'neck vertebra, neck' = AMERIND *nuk'* ~ *nuq'* 'throat,' North Sahaptin *nuq'(waš)* 'throat,' Chorti *nuk'* 'swallow,' Huastec *nuk'* 'throat,' Proto-Muskogean **nukkwi* 'neck,' Tequistlatec *nuk'* 'swallow,' San Antonio *(p-)ēnik'a* 'throat.' [N 330; A 255]

◇ Despite the reconstruction of **-i-* in Proto-Nostratic, both families that preserve this root (Uralic and Altaic) also show forms with *-u-* (cf. Selkup *nukka* 'nape of the neck,' Khalkha *nugas(an)* 'spinal cord'). In light of the Amerind evidence I am inclined to see **-u-* as the original vowel, with a development *u* > *ju* > *i* accounting for the palatal nasal in both Uralic and Altaic (cf. the variable pronunciation of 'tune' as [tun] or [tjun]).

20. NOSTRATIC **patʌ* 'foot, footstep' = AMERIND **pati* 'foot,' Zuni *pačči* 'sole,' Klamath *peč* 'foot,' Lutuami *pat*'*, Maidu *paji*, Santa Clara *(či-)pai*, Quinigua *boi* 'deer's foot,' Tewa *po* 'leg,' Maku *(t*e-)peči* 'shin,' Puinave *(a-)ped* 'shin,' Ticuna *para* 'tibia,' Kariri *bui* 'foot,' Baure *poj* 'foot,' Andoke *pa* 'leg,' Vilela *ape* 'foot,' Chiquito *piri* 'leg,' Proto-Ge **par* 'foot,' Opaie *(či-)para* 'foot,' Arikapu *(ši-)pra* 'foot,' Botocudo *po* 'foot, hand.' [N I:20; A 120]

21. NOSTRATIC **Homsa* 'meat' = AMERIND *mat*i* 'meat,' Proto-Uto-Aztecan **mas* 'deer,' Achomawi *misut** 'meat,' Esselen *amisah* 'deer,' East Pomo *bīše* 'meat, deer,' San Miguel *maṭ^h* 'meat,' North Yana *basi* 'meat, body,' Diegueño *ematt* 'meat,' Ticuna *mači* 'meat,' Maku *muči* 'meat,' Kaliana *mit*a* 'meat.' [N 114; A 185]

22. NOSTRATIC **ĶaSʌ* 'bone' = AMERIND **k'at*i* ~ **q'at*i* 'bone, hard,' Chinook *qot*o* 'bone,' Lower Umpqua *qasqas* 'hard,' Yuki *k'iʔt* 'bone,' Zuni *k'usa* 'be hard,' Chitimacha *kat*i* 'bone,' Arikara *kaȟš* 'hard,' Wichita *kasɪ* 'hard,' Keres *(s-)k'asɪ* 'hard,' Itonama *k'osa* 'dry,' Eten *koč* 'dry,' Mapudungu *kaθi* 'bone,' Cavineña *(epere-)'katse* 'rib.' [N 219; A 141, P 102]

23. NOSTRATIC **mānʌ* 'man, male' = AMERIND **mano* ~ **meno* 'man, husband,' Chumash *łmano* 'man,' Karok *ʔavan* 'husband,' Subtiaba *ambin* 'husband,' Kaliana *mīnō* 'man, person,' Puinave *mbon* 'man,' Wanana *meno* 'man,' Guahibo *amona* 'husband,' Callahuaya *mana* 'person,' Cayapo *miæn* 'husband,' Kaingan *eibene* 'husband.' [N 292; A 154]

24. NOSTRATIC **ķaćʌ* 'man, youth' = AMERIND **k(')oti* 'boy, child,' Proto-Siouan **kši* 'boy,' Seneca *-ksa-* 'child,' Chimariko *kač* 'son,' Chumash *kučo* 'child,' Coahuilteco *k'ui* 'daughter,' Cotoname *kot* 'son,' Clear Lake Pomo *qus* 'baby,' Chitimacha *kiča* 'girl,' Atakapa *kiš* 'girl,' Mixe *kiiš* 'girl,' Tzeltal *ač'iis* 'girl,' Acroamirim *kutæ* 'child,' Macuni *ia-kuto* 'child,' Proto-Ge **kra* 'child,' Trumai *axos* 'young, child,' Canichana *kohti* 'husband,' Uman *katu* 'man,' Curiariai *xot* 'person.' [N 191; A 281, AK 44, P 88, H 29, MT 61]

25. NOSTRATIC **ṭOmpʌ* 'protuberant, bulging; to swell' = AMERIND **tumpa* 'to fill up; to be full,' Cuitlatec *timpa* 'all,' Xinca *tumu* 'finish,' *tumuki* 'all,' Warrau *tobo* 'full,' Allentiac *topata* 'be full,' Cayapa *tuwa* 'full,' Move *debe* 'enough,' Motilon *tow* 'all,' Tucano *tubia* 'stop up,' Choroti *tipoi* 'be full,' Tacana *tupu* 'it reaches,' Lule *tump-s* 'finish,' Cavineña *tupu* 'enough.' [Illich-Svitych 1967:335; A 74, CP 83, MP 30]

26. NOSTRATIC **šingʌ* 'snow,' = AMERIND **t*anik* 'cold (weather),' Proto-Siouan **sni* 'cold,' Catawba *čī* 'cold,' Proto-Oto-Manguean **(n)(ʔ)si(h)(n)* 'cold,' Sumu *sang* 'cold weather,' Chilanga *t*'ana* 'cold,' Similaton *sani* 'freeze,' Chimu *t*an* 'cold,' Chimila *sohnikote* 'cold,' Borunca *t*āra* 'be cold,' Yanomam *sãi* 'cold,' Kahuapana *sanøk-li* 'cold,' Zaparo *sʌnʌ* 'cold,' Surinam Carib *īsana* 'cold' (n.), Yagua *sanehe* 'rainy season.' [N I:23; A 69]

27. NOSTRATIC **ĶEčа* 'summer heat' = AMERIND **ket^{s}* ~ **k'at^{s}* 'hot,' Proto-Central Algonquian **kešj* 'hot,' Yurok *ket^{s}ojn-hego* 'sun,' Proto-Salish **k'^{w}as* 'hot, scorch.' [N 224; AK 103]

28. NOSTRATIC **Ķä/lH/ä* 'tongue, talk' = AMERIND **k^{w}al* ~ **k^{w}el* 'say, speak,' Proto-Algonquian **kelaw* 'speak,' Wiyot *hēl* 'say,' Oneida *-kalatu-* 'tell a story,' Cherokee *kakāra?* 'story,' Musqueam *q^{w}ʌl* 'speak,' Squamish *k^{w}al* 'answer,' Caddo *kan-* (quotative), Chinook *k^{w}ɬ* 'tell,' Wappo *kal* ~ *kel* 'say.' [N 221; A 218]

29. NOSTRATIC **to/H/ʌ* 'to give, receive, bring' = AMERIND **atu* ~ **ato* 'to give, take, carry,' East Pomo *du-* 'with the hand,' Washo *du-* 'with the hand,' Chimariko *tu-* 'with the hand,' Cayapo *ta?* 'take,' Catio *ata* 'take,' Chami *do* 'take,' Kagaba *tei* 'carry,' Puhuenche *tu* 'take,' Yahgan *ata* 'take,' Zaparo *ata* 'take,' Proto-Carib **utu* 'give,' Krenje *to* 'bring,' Bororo *to* 'bring,' Umotina *ta* 'take.' [N I:30; A 139]

30. NOSTRATIC **ţumʌ* 'dark' = AMERIND **t'umak* 'dark,' Nootka *tom* 'dark,' Yurok *t^{s}mej* 'be evening,' Kutenai *tamoxu-int^{s}* 'be dark,' Keres *t^{s}'amišt^{j}* 'dark,' Yokuts *čīm?ēk* 'get dark,' Klamath *č'mog* 'dark,' Wappo *sum* 'evening,' Chitimacha *t^{s}'ima* 'night,' Atakapa *tem* 'night,' Koasati *tamoxga* 'night,' Tetontepec *t^{s}o?m* 'midnight,' Huastec *t^{s}amul* 'night,' Yupultepec *ts'yøma* 'night,' Chiquimulilla *su?max* 'black,' Xinca *syma* 'night, black,' Caranga *sumči* 'dark,' Urupa *etim* 'night.' [N I:36; A 76]

31. NOSTRATIC **büĶa* 'to bend, be bent' = AMERIND **puku* ~ **poko* 'knee, elbow; to kneel,' Chumash *sibuk* ~ *šipuk* 'elbow,' Walapai *mipuk* 'knee,' Southwest Pomo *moko*, Washo *moko*, Zuni *mokči* 'elbow,' Chitimacha *mōku* 'knee,' Tunica *muhki* 'to bow,' Huave *mohkeh* 'crouch,' Zoque *muhkehk* 'crouch,' Guamaca *buka* 'knee, elbow,' Warrau *muku* 'knee,' Yanomamï *makoke* 'knee,' Napipi *makara* 'thigh,' Iranshe *poku* 'bow' (n.), Proto-Nambikwara **pok* 'bow' (n.), Puinave *bičog* 'bow' (n.). [N 25; A 157, MT 16]

32. NOSTRATIC **bur(H)ʌ* ~ **bor(H)ʌ* 'loose soil, dust' = AMERIND **puru* ~ **pulu* 'ashes,' Northeast Pomo *mal* 'ashes,' Seri *emaɣ*, Shasta *ma(h)awa* 'dust, ashes,' Kiliwa *muwag* 'powder,' Cocopa *mwar* 'powder,' Cuna *puru*, Uncasica *bura*, Kagaba *muli*, Guamaca *bun*, Rama *pluŋ*, Muoi *mono*, Goajiro *pari*, Toyeri *palo*, Esmeralda *bul*, Proto-Tacanan **muru*, Krenje *pro*, Cayapo *pra* 'embers,' Guato *(ma-)fora(-ta)*, Tibagi *brene* ~ *mrene*. [N 22; A 11]

33. NOSTRATIC **čüngʌ* 'smell, odor' = AMERIND **čun(k)a* 'nose; to smell,' Seneca *?osẽnõ?* 'smell,' Chiwere *sĩnge* 'smell,' Catawba *sũw* 'stink,' Wintu *łūn* ~ *łīn* 'to smell,' Yokuts *ţ^{h}üŋ* 'nose,' Chiripo *ču* 'nose,' Sechura *čuna* 'nose,' Leco *(bi-)činua* 'nose,' Cholona *čul(-nik)* 'snotty,' Proto-Quechuan **sinqa* 'nose.' [N 51; AK 175, CP 133, A 79]

34. NOSTRATIC **kamu* 'to seize, squeeze' = AMERIND **kemo* 'to steal,' Proto-Central Algonquian **kemot* 'to steal,' Blackfoot *aikamosi* 'to steal,' Yurok *kemol* 'to steal,' Wiyot *kemar* 'to steal,' Nootka *k'imk'ima* 'to steal.' [N 157; AK 181]

35. NOSTRATIC **ĶüjnA* 'wolf, dog' = AMERIND **k'uan* 'dog,' Achomawi *kuan* 'silver fox,' Tonkawa *?ekuan* 'dog,' North Yana *kuwan-na* 'lynx,' Yurimangui *kwan* 'dog,' Towa *kiano*, Tiwa *kuijani (-dã)*, Zacapoaxtla *it^{s}kwiin-ti* 'dog,' Chatina *čuni, xnih*, Popoloca *kunija*, Ixcatec *?uniña*, Chocho *?uña*, Mazatec *nañа*, Chilanga *ak'uan* 'deer,' Tarascan *axuni* 'deer, animal,' Similaton *aguingge* 'deer.' [N 238; A 86]

36. NOSTRATIC **küni* 'wife, woman' = AMERIND **kuan* 'woman, wife, girl,' Tonkawa *k^{w}ān* 'woman,' Seri *kuãam*, Tequistlatec *(ɬ-)aga?no*, Yokuts *kain*, Tsimshian *hanax*, Kamayura *kunja*, Yuracare *igũn* 'girl,' Cuica *kneu* 'female,' Guahibo *kvantua* 'first wife.' [N 178; A 272, P 283, H 164]

37. NOSTRATIC **mAnʌ* 'stay in a place, stand firmly' = AMERIND **man* ~ **men* 'to sit, in, inside,' Tsimshian *-am* (locative), Takelma *me* 'here,' Miwok *-mu* 'in,' Wappo *ma-* 'in,' Creek *i-ama* 'here,' Cholona *-man* 'in,' Aymara *mankxa* 'inside,' Mapudungu *minu* 'inside,' Quechua *-man* (dative), Yameo *-me* ~ *-ma* 'at, in,' Chama *-me* 'location,' Lule *-ma* 'in,' Mascoy *-me* 'in,' Botocudo *men* 'to sit,' Crengez *moinj* 'to sit,' Capoxo *moinjam* 'to sit,' Bororo *amũu* ~ *amĩ* 'to rest.' [N 287; G46, A 59, MG 99]

38. NOSTRATIC **manu* 'to think, desire, conjure, request' = AMERIND **mVnV* 'to wish, love, seek,' Shawnee *menw* 'prefer, like,' Laguna *amū* 'love,' Catawba *muʔe* 'wish,' Thompson *-mamʌn* (desiderative), Nootka *māna* 'try, test,' Lake Miwok *menaw* ~ *minaw* 'try,' Tunica *me* 'seek,' Takelma *mīlī* 'love,' Tsimshian *bāl* 'try,' Chimariko *miʔinan* 'like,' Karok *ʔīmnih* 'love,' Timucua *mani* 'think,' Colorado *muna-ha* 'wish,' Andaqui *miña-za* 'I sought,' Aymara *muna* 'love,' Cholona *men* 'wish,' Quechua *muna* 'wish,' Lengua *min(-jeji)* 'wish,' Mataco *umin* 'wish,' Kamakan *mã* 'seek,' Botocudo *moru* 'love,' Bororo *emaru* 'seek.' [N 281; A 270]

39. NOSTRATIC **pu/ṭ/ʌ* 'hole, vulva, anus' = AMERIND **petV* 'vagina,' Washo *(d-)ībis* 'vagina,' Karok *vīθ* 'vagina,' Tequistlatec *(la-)bešu* 'vagina,' Guahibo *petu* 'vagina,' Kandoshi *apčir (-ič)* 'vulva,' Toyeri *apuit* 'vagina,' Wachipairi *ped* 'vagina,' Uro *piši*. Cf. also such Equatorial forms as Siusi *tˢupote* 'vagina,' Campa *sibiči* 'vulva,' *šibiči* 'penis,' Uro *šapsi* 'genital organ.' [Illich-Svitych 1967: 340; A 263, EQ 121]

40. EURASIATIC **tik* 'finger; one,' Proto-Indo-European **deik* 'to show, point,' **dekm̥* '10,' Latin *dig (-itus)* 'finger,' *dic(-āre)* 'to say,' *decem* '10,' Proto-Germanic **taihwō* 'toe,' Old English *tahe* 'toe,' English toe, Old High German *zêha* 'toe, finger'; Uralic: Votyak *odik* 'one,' Zyrian *ōtik* 'one'; Turkic: Chuvash *tek* 'only, just,' Uighur *tek* 'only, merely,' Chagatai *tek* 'only, single,' Turkish *tek* 'only,' *teken* 'one by one'; Korean *(t)tayki* 'one, thing,' *teki* 'one, guy, thing,' Old Korean *tēk* '10'; Japanese-Ryukyuan: Japanese *te* 'hand'; Ainu *tek* ~ *teke* 'hand,' *atiki* 'five'; Gilyak *řak* 'once'; Chukchi-Kamchatkan: Kamchadal *itygin* 'foot, paw'; Eskimo-Aleut: Eskimo: Kuskokwim *tik(-iq)* 'index finger,' Greenlandic *tik(-iq)* 'index finger,' *tikkuagpaa* 'he points to it'; Aleut: Attu *tik(-laq)* 'middle finger,' *atgu* 'finger,' *atˡaqan* 'one,' *taɣataq* 'one,' Atka *atakan* 'one' = AMERIND **tik* 'finger, one,' Karok *tīk* 'finger, hand,' Itene *taka* 'one,' Santa Rosa *dixi* 'finger,' Katembri *tika* 'toe,' Yuracare *teče* 'thumb,' Masaka *(ki-)taka* 'arm,' Ticuna *take* 'elbow,' Kukura *tikua* 'finger,' Trio *tinki* 'one,' Yagua *tiki* 'one,' Botocudo *(po-)čik* 'one,' *ğik* 'alone,' Proto-Ge **(pɨ-)tˢi* 'one.' [EU; A 110, MT 1]

41. NOSTRATIC **ʔejʌ* 'to come, go,' = AMERIND **jaʔ* 'to go, come,' Proto-Central Algonquian **jā* 'to go,' Upper Chehalis *ja* 'road,' Catawba *jā* 'road,' Wishram *ja* 'to go,' Choctaw *ia* 'to go,' Alsea *jax* 'to go,' Tsimshian *jē* 'to go,' Wappo *-ja-* 'to go,' Karankawa *je* 'to go,' Tonkawa *jaʔa* 'several move,' Washo *ijeʔ* 'he goes,' Yana *aja* 'to go,' Proto-Aztec-Tanoan **ja* 'to go, carry,' Proto-Oto-Manguean **(n)ja(n)* 'road,' Motilon *ja* 'to walk,' Timucua *eje* 'road,' Chibcha *ie* 'road.' [N 130; A 128]

◇ In Illich-Svitych (1967: 357) the reconstruction was given as **je(Hʌ)*.

42. NOSTRATIC **m/o/nʌ* ~ **m/o/n/g/ʌ* 'much, big' = AMERIND **moni* 'many, large, all,' Yokuts *mone* 'much,' Lutuami *mōni-s* 'large,' Atakapa *mon* 'many, all,' Yuki *muna* 'all,' Timucua *mine* 'large,' Guambiana *minu* 'many,' Chimila *muni* 'abound,' Itonama *amaniato* 'many,' Colorado *man* 'many,' Guamaca *bini* 'many.' [Illich-Svitych 1967: 348; A 182]

43. NOSTRATIC **paṭʌ* 'broad' = AMERIND **patˡa* ~ **petˡa* 'broad,' Proto-Salish **pʌtˡ* 'broad,' Proto-Siouan **pra* 'flat, broad,' Yurok *pel* 'broad,' Wiyot *bel* 'flat, wide,' Tsimshian *batˡ* 'broad,' Maidu *batbatpe* 'flat, planar,' Alabama *patʰa* 'broad,' Yahi *-d'pal* 'flat,' North Pomo *badō* 'flat,' Quinigua *patama* 'broad,' Tequistlatec *spatˢ'* 'broad,' Kiliwa *pataj* 'broad.' [Illich-Svitych 1967: 372; A 52]

44. NOSTRATIC **talHʌ* 'shoulder' = AMERIND **ta(ʔ)la* 'shoulder,' Nisqualli *talakʷ* 'shoulder,' Songish *tʔɛ̓law'* 'wing,' Shawnee *telja* 'shoulder,' Achomawi *tala* 'shoulder blade,' San Antonio Salinan *itaʔl* 'shoulder,' North Yana *dul* 'neck,' Xinca *taɬi* 'neck,' Ulua *salaχ* 'shoulder,' Lenca *thala* 'neck,' Tarascan *teru(-nhe-kua)* 'chest,' Chimu *altærr* 'neck,' Catio *osorro* 'throat,' Proto-Carib *mootali* 'shoulder,' Uitoto *emodo* 'back,' Yagua *namatɔ* 'shoulder.' [Illich-Svitych 1967:355; A 228, CP 30, CP 131, MC 59]

◇ In the Macro-Carib forms **mo-* appears to be the demonstrative discussed in No. 5 above.

45. NOSTRATIC **qoṭi* 'fire; to set on fire' = AMERIND **(ʔ)oti* 'fire; to burn,' Proto-Keresan **ʔiri* 'to be hot,' Acoma *idi* 'fire,' Seneca *aʔta* 'fire,' Blackfoot *ototo* 'to burn' (tr.), Wiyot *ad* 'fire,' *dōw* 'to burn,' Proto-Uto-Aztecan **ta(h)i* 'fire; to burn,' Proto-Oto-Manguean **ntah* 'warm, fever,' Paez *otˢ* 'to burn,' Tarascan *ete* 'to burn,' Moseten *tˢi* 'fire,' Proto-Tacanan **ti* 'fire,' Proto-Panoan **čiʔi* 'fire,' Fulnio *to* 'to burn,' Caraja *hæote* ~ *eoti* 'fire.' [N 343; A 112]

◇ Illich-Svitych (1967:352) gave the reconstruction **/H/oṭʌ*.

46. NOSTRATIC **Ḳap'a* 'to cover, close' = AMERIND **k(')ap(')a* ~ **q(')ap(')a* 'to cover, close,' Squamish *qʌp'* 'to close,' Chemakum *hap'ilii* 'to cover,' Proto-Central Algonquian **kep* 'to close,' Wiyot *kʷapɬ* 'to be covered,' Catawba *kʌpa* 'to close,' Dakota *akaxpa* 'to close,' Tonkawa *kapa* 'to shut,' Cuna *akapa* 'to close one's eyes,' Atacama *k'aba* 'to hide,' Mascoy *kjab* 'to cover,' Panobo *kepui* 'to close,' Coroado *kapo-em* 'to close.' [N 212; A 66]

◇ Illich-Svitych (1967:356) gave the reconstruction **/ḳ/apʌ*.

47. NOSTRATIC **ʔitä* 'to eat' = AMERIND **(ʔ)ito* 'to eat,' Zuni *ʔito* 'to eat,' Sayula *toʔ* 'to eat,' Jacaltec *ita* 'food,' Uspantec *ti* 'to eat,' Huave *ʌet* 'to eat.' [N 136; P 60]

48. NOSTRATIC **ƩEḲu* 'water' = AMERIND **ʔok'ʷa* ~ **ʔaq'ʷa* 'water; to drink,' Proto-Central Algonquian **akwa* 'from water,' Kutenai *-qʷ* 'in water,' Songish *qʷaʔ* 'water,' Chitimacha *kuʔ* ~ *ʔak-* 'water,' Chickasaw *okaʔ* 'water,' Hitchiti *uki* 'water,' Zoque *ʔuhk* 'drink,' Yucatec *uk'* 'be thirsty,' Kekchi *uʔka* 'drink,' Takelma *ukʷ* 'drink,' Nez Perce *k'u* 'drink,' Yuki *uk'u* 'water,' Wappo *ʔuki* 'drink,' Zuni *k'a* 'water,' Chimariko *aqa* 'water,' Cotoname *aχ* 'water,' Kashaya *ʔahqʰa* 'water,' Seri *ʔax* 'water,' Tonkawa *ʔāx* 'water,' Yana *xa(-na)* 'water,' Yuma *axa* 'water,' Yamana *aka* 'lake,' Mapudungu *ko* 'water,' Aymara *oqo* 'to swallow,' Auake *okōā* 'water, river,' Tucano *oko* 'water, rain,' Bahukiwa *uku-mi* 'he is drinking,' Guana *uko* 'rain,' Lule *uk* 'to drink,' Mataco *joke* 'to drink,' Bororo *ku* 'drink' (n.), Koraveka *ako* 'drink!' [N 139; A 87]

49. NOSTRATIC **käjwʌ* 'to chew' = AMERIND **k'aiwa* 'to bite,' Tsimshian *q'ai* 'to bite,' Bodega *kawwu* 'to bite,' Kiowa *k'ɔ* 'to bite,' Proto-Uto-Aztecan **ko* 'to chew,' Mura *kau(-assa)* 'to eat,' Paez *koja* 'food,' Bribri *iku* 'to bite,' Sabela *kæ̃i* 'bite!,' Masaka *kaukæwi* 'to bite,' Movima *kaiki* 'to eat,' Miranya *me-ikoi* 'to bite,' Uitoto *kai* 'to gnaw,' Lule *kai* 'to eat,' Vejoz *okua* 'to bite,' Marinahua *kiju* 'to bite,' Proto-Tacanan **ika* 'to eat, bite,' Meniens *kua* 'to eat,' Proto-Ge **ku* 'to eat.' [N 160; A 33]

50. NOSTRATIC **ḳäćä* 'to cut, break' = AMERIND **k'at'i* 'to cut, break,' Klamath *katt'* 'to break,' Wappo *k'eše* 'to cut,' Atakapa *ketˢ* 'to break,' Creek *koče* 'to break,' Tzotzil *k'as* 'to break,' Achomawi *kati* 'to break,' Yuma *akʲeṭ* 'to cut,' Tonkawa *kesʔatˢe* 'to be broken,' Atacama *k'ura* 'to break,' Paez *kond* 'to break,' Warrau *kare* 'to break,' Muinane *kodʔa* 'to cut,' Chayma *akete* 'to cut,' Uitoto *kaita* 'to cut.' [N 196; A 49]

HISTORICAL LINGUISTICS THROUGH THE EYES OF A NON-LINGUIST

Viktor Shnirelman

Recently, because of its extraordinary advances in proto-language reconstructions, comparative-historical linguistics has taken an important place among other disciplines (archeology, cultural and physical anthropology, etc.) which claim to investigate ethnic history and prehistory. In reconstructing a proto-language lexicon, scholars create a concrete foundation for exploring important cultural and social characteristics of the proto-language speakers, and open new perspectives from which to analyze old problems of prehistory.

At the same time, a new problem has arisen concerning the relationships among data received by different approaches, including the linguistic. A single standard procedure should be employed to examine all historical sources from all disciplines. This procedure, in order to be relevant to reconstructed linguistic data, should be informed by a deep understanding of ethnic processes, linguistic and otherwise, in prehistoric and primeval societies.

An important pre-requisite for the linguo-archeological approach is the capacity of each discipline to explore the same historical processes or events using its own methods. It seems that only a comparison of those linguistic and archeological data which are obtained independently may allow us to identify given archeological complexes with given linguistic groups. Reconstructed cultural lexicon is of great importance for this methodological procedure.

I should like to analyze these problems in connection with the emergence of a food-producing economy, which influenced and left traces in almost every cultural sphere, including language. It is significant that different aspects of the process in question may be investigated by both archeological and linguistic methods independently. Likewise, each

conclusion may be verified independently. Such a situation is conducive to especially accurate historical reconstruction.

There are four major areas to this investigation: (1) The development of independent chronological scales; (2) The analysis of prehistoric cultural elements; (3) The exploration of inter-cultural (inter-ethnic) contacts; and (4) The investigation of ancient ethno-cultural split and radiation. The combined use of all these approaches allows us to locate a proto-language homeland, to describe specific cultural features of ancient peoples, to pinpoint the times and locations of proto-language split and radiation, to identify ethno-linguistic entities in close contact at definite times and locations, and so on.

An analysis of reconstructed cultural lexicon, and its comparison with archeological data, are of critical significance for the linguo-archeological approach. It must be pointed out that there are some reasons for discrepancy between linguistic data and archeological data, because historical reality expresses itself rather differently in these two kinds of sources. For instance, linguistic data may reveal the emergence of agriculture at the most rudimentary "pre-agricultural" stage, while the earliest archeological evidence may originate from a much later period of agricultural development.

Scholars usually use so-called ecological lexicon to locate a proto-language homeland. A special analysis shows that indigenous ecological nomenclature is based not on specific, but on generic terms for flora and fauna. Hence, the reconstructed lexicon contains only generic terms. The definition of any strict homeland is a very difficult, if not impossible, task under these circumstances. Perhaps the accuracy of ecological reconstruction would increase if linguists could find ways to reconstruct a specific ecological lexicon.

Reconstructed terms for domesticated animals and plants are of great importance for the linguo-archeological approach. This lexicon is more

conservative than ecological lexicon, because people took the denoted items with them when they changed their residence. Thanks to this paleo-botanical and paleo-zoological lexicon, there is a real possibility of exploring ancient patterns of migration and diffusion. At the same time, there are limits to this kind of investigation, because the terms in question have sometimes changed their meaning or been lost altogether. Such changes could have occurred especially upon migration to a dissimilar ecological zone, in which it was necessary to abandon old crops and adopt new ones. It is worth noting that animals are more tolerant than plants to changes in ecological conditions. Therefore, the nomenclature for domesticated animals seems to be more consistent than that of cultivated plants under conditions of migration.

According to recent data, territorial expansion of agriculture occurred more often through diffusion of agricultural traditions than through migrations of populations themselves. Therefore, it is important to establish whether these processes were regularly accompanied by borrowings of corresponding lexicon. To put it another way, we must determine whether reconstructed terms are a fully reliable indicator of introduced species adoption.

Although one may cite many examples of lexical borrowings which indicate the importation of cultural elements, there is other evidence which attests to a quite different process. According to ethnological materials, the recipients' terms for some imported items differ from the donors' terms for the same items. There are specific ways in which these terms developed under aboriginal conditions.

Therefore, one must be very cautious in using reconstructed cultural lexicon to investigate inter-cultural relationships. It seems apparent that the accuracy of historical conclusions is in direct dependence on the volume of reconstructed lexicon: one must possess not a selective, but a comprehensive reconstructed cultural lexicon in order to avoid errors.

Only by building a strong foundation of linguistic data, and comparing them carefully with data of archeology and other disciplines, can one hope to determine the true course of historical events.

The last, but not least, problem worth mentioning is the language diffusion process which was, more often than not, responsible for the establishment of broad linguistic entities. Unfortunately, our knowledge of the pre-conditions, processes, and consequences of language replacement is rather weak. More extensive ethno-linguistic materials are needed to elucidate all the problems thus far surveyed.

LINGUISTIC PROTO-HISTORY

Roger Wescott

Unlike their American counterparts, European historians and pre-historians often employ the term "proto-history" to designate the twilight zone between history and pre-history. At its broadest, proto-history subsumes the entire period between the Lower Paleolithic and the 5th century B.C. when histories (as distinct from mere annals) began to be written.

Recent work by "transphyletic" linguists is making it increasingly probable that most, if not all, language groups can be shown to be genealogically related to one another. In terms of conventional chronology, however, such monogenesis would to be undemonstrable, since lexicostatistics fade into ambiguity at time-depths greater than ten millennia.

One way to resolve this apparent contradiction is to adopt the shorter chronologies now being advocated by many of those diachronic theorists known as catastrophists in geology, as saltationists in paleontology, and as revisionists in archeology. Such chronological foreshortening may yield a total duration for the existence of spoken language of no more than ten millennia.

PRELIMINARY REPORTS

PROBLEMS OF NOSTRATIC COMPARATIVE PHONOLOGY
(Preliminary Report)

Aron Dolgopolsky

Nostratic consonant system according to Illič-Svitič ("Opit sravneniya nostratičeskix yazykov")

pʻ	p	b			m			w
ṭ	t	d			n	l	r	
ç	c	ʒ	s	z				
ć	ć	ʒ́	ś	ź ??	ń	Ĺ	ŕ	j
č	č	ǯ	š		ñ	ɬ		
			ś́	ʎ				
ķ	k	g						
q	q	9						
			ḥ	ʕ				
ʔ			h					

Nostratic consonant system at the present state of research (A. Dolgopolsky)

p	p	b			m			w
ṭ	t	d			n	l	r	
ç	c	ʒ	s	z				
ć	ć	ʒ́	ś	ź	ń	Ĺ	ŕ	y
č	č	ǯ	š	ž	ṇ	ɬ		
ĉ	ĉ	ĝ	ŝ	ẑ				
ķ	k	g			ŋ			
q	q	9	χ	ʏ				
			ħ				ʕ	
ʔ			h					

Symbols: Illič-Svitič: under-dot (ṭ, ç, ķ) — glottalized consonants (ejectives); ḥ — voiceless pharyngeal fricative; ʕ — voiced pharyngeal; ñ, ɬ — cacuminal n, l; ś́, ʎ — voiceless and voiced lateral fricatives; q, q, 9 — postvelar stops; ʒ, ʒ́, ǯ — voiced affricates.

Dolgopolsky: under-dot — glottalized consonants; ṇ, ɬ — postalveolar (cacuminal, retroflex?) n, l; circumflex (ĉ, ĉ, ĝ, ŝ, ẑ) denotes lateral obstruents; ʒ, ʒ́, ǯ, ĝ — voiced affricates; q, q, 9 — uvular stops; χ, ʏ — uvular fricatives (= Arabic خ, غ); ħ — voiceless epiglottal (pharyngeal) fricative (Arabic ح); ʕ — epiglottal (pharyngeal) approximant (Arabic ع).

Vladislav Illič-Svitič (1932 — 1966) was the first scholar to discover regular phoneme correspondences between the daughter-languages of the Nostratic macrofamily and to reconstruct the underlying proto-Nostratic phonemes, as well as some 600 Nostratic roots.

Since Illič-Svitič's death 22 years ago there have been many important achievements in Hamito-Semitic (especially Chadic, Cushitic, Semitic and Berber), Uralic, Indo-European and Dravidian comparative linguistics, in Kartvelian lexicography, in Tungusian and Turkic etymology, etc. In the light of these achievements and a remarkable increase in the stock of reconstructed Nostratic stems Illič-Svitič's phonological reconstructions may be verified and, wherever necessary, modified or revised.

The most essential parts of Illič-Svitič's system of reconstructions have been corroborated by a large number of recently discovered Nostratic roots. This is true of his theory of the Nostratic stops and their reflexes (IE mediae = Kartvelian and Hamito-Semitic voiceless = Uralic intervocalic short stops, etc: IE mediae aspiratae = Kartv. and HS voiced stops = Uralic intervocalic voiced fricatives, etc.; IE tenues = Kartv. and HS ejectives and [deglottalized] voiceless stops = Uralic intervocalic long stops, etc.)[1], as well as of his theory of the IE labialization and palatalization of the gutturals and of the K[artvelian] and HS labialization as reflecting the following p[roto]-N[ostratic] vowel. Other parts of his hypothesis (correspondences of the resonants and a large part of his theory of laryngeals) have been corroborated as well.

[1] No wonder that a recent attempt to establish a different set of IE-Semitic correspondences of stops (made by a scholar not acquainted with the Nostratic studies of Illič-Svitič and his school) has proven to be unsuccessful.

What needs revision, in my opinion, are some parts of his theory of sibilants and especially affricates.

To my mind, four points are to be reconsidered:

A. The least important change is a different phonetic interpretation of some phonemes reconstructed by V. Illič-Svitɨč: his *ś, *ć and *ḉ are to be reinterpreted as plain (not palatalized) sibilants *s, *c and *ç, while IS's *s, *c, *ç and *ʒ should be understood as palatal sibilants *ś, *ć, *ḉ and *ʒ́. Actually my interpretation is more or less identical to that found in an earlier paper by V. Illič-Svitɨč, namely his article "Materialɨ k sravneniyu nostratičeskix yazɨkov" (written in 1965 and published in 1967).

In pN three orders[2] of sibilants (including affricates) are to be distinguished: a *s-order, a *ś-order and a *š-order (leaving apart for the moment the lateral *ŝ-order). The distinction of *s, *ś and *š:

Proto-Nostratic

IS's interpretation ("Opɨt sravneniya")	IS's earlier notation and my notation	Kartvelian	Uralic
*s	*ś	*s	*ś
*ś	*s	*ṡ (Klimov's *s_1)	*s
*š	*š	*š	*š.

Cp. the distinction between plain and palatal consonants among the resonants:

*n	*n	*n	*n
*ń	*ń	*n	*ń
*l	*l	*l	*l
*ĺ	*ĺ	*l_2, *r/l	*ĺ.

As we can see from the history of the resonants, it was Uralic and not Kartvelian that preserved the Nostratic distinctive feature of palatality. If U *ń and *ĺ go back to pN *ń and *ĺ, it is reasonable to suggest that the pN sibilant underlying U *ś is to be interpreted as *ś. As to Kartvelian, in its prehistory there was a sibilant shift:

pN *ś, *ć, *ḉ, *ʒ́ > pKartv. *s, *c, *ç, *ʒ

pN *s, *c, *ç, *ʒ > pKartv. *ṡ, *ċ, *ç̇, *ʒ̇ (= Klimov's *s_1, *c_1, *$ç_1$, *$ʒ_1$).

The phonetic nature of the K *ṡ-order is hard to determine. What we know is that it has yielded hissing sibilants (s, c, ç, ʒ) in Georgian and hushing sibilants (š, č, č̣, ǯ) in Megrelian, Laz and Svan (and therefore it is called "hissing-hushing sibilants" by Klimov) and that it differs both from the *s-order and the *š-order. It is my guess that the difference between the *š-sibilants and the *ṡ-sibilants in K may resemble that between two series of hushing sibilants in Abkhaz (a West Caucasian language connected by Sprachbund ties with Kartvelian): the lamino-post-alveolar š̌, ž̌, č̌, č̣̌, ǯ̌ (шь, жь etc. of the practical Cyrillic orthography) and the apico-palatal ṡ̌, ż̌, ċ̌, ç̇̌, ʒ̇̌ (ш, ж, etc. of the Cyrillic orthography). I hope that it will be possible to cast some etymological light on the question by studying loan-words in Kartvelian and Abkhazo-Circassian.

B. In "Opɨt sravneniya" (vol. I, p. 148) we find a correspondence: pN *ʒ́ > Hamito-Semitic *ḏ, Kartvelian *$ʒ_1$, IE *-sd- (?), Dravidian *c-, Altaic *ǯ-. This sound correspondence and this reconstruction are to be flatly rejected. Here the HS data have been misinterpreted due to a misleading Semitological traditional notation of the Semitic lateral ejective *ç̂ (or *ṣ̂) as "*ḏ". The alleged sound correspondence is based on three etymologies only:

(1) N *ʕ∇ʒ́∇ 'branch' > HS "*ʕḏ": Sem. "*ʕḏ" (i.e. *ʕiç̂-) 'tree', Eg. ʒʕʕ 'branch', Berb.: Shilh agǯǯa 'trunk, log', as well as some words of Cushitic and Chadic languages meaning 'tree' and bearing

[2] "Order" (articulatory type) in the sense of A. Martinet's phonological theory (A. Martinet, *Eléments de linguistique générale*).

some phonetic resemblance to S *ʕiĉ-: Beja hindi/e, Saho haḷā, Afar haḷā, Iraqw xa'teno, Burungi ḫāda 'stick', Chad "*Hḏ" 'tree' > Hausa ɬtǎčé, Bolewa oče, Mandara hǎẓà (i.e. há:ʒà) 'tree', etc. ‖ IE *H⁽o⁾sd-o- 'branch' (Illič-Svitɨč, *Opɨt sravneniya nostratičeskix yazɨkov*, I, p. 276-7).

(2) N *ǯ⁽a⁾ñV 'foetus, pregnancy, posterity' > HS "*ḏn-" 'to get pregnant, posterity; brother, sister': Sem. "*ḏn-" (i.e. *ĉn-) > Arab. ḍanw-, ḍinw- 'small children', ḍan'- 'posterity', Geez "ḏns" (i.e. ĉns) 'to get pregnant' |Cush. 'brother': Beja san, Bilin dan, pl. šān, Kemant, Quara zän, Hamir zin, etc.; Kambatta hizo, etc.| Chad. *⁽ʒ⁾Vn- > Mandara bzə̄t (allegedly from *mzVn) 'child, sun', Kanakuru, Hina, Tera ǯi̯na, Gabin šēna 'step-siblings', etc.| ? Eg. šn 'brother' ‖ K *ʒ₁ma id. ‖ Drav. *caṉ-ay 'foetus, pregnancy' (Il.-Sv., *Opɨt sravneniya...*, II, pp. 111-2).

The third etymology is found (with a query!) in the preliminary publication "Materialɨ k slovaryu nostratičeskix yazɨkov" only:

(3) ? N *ǯVγV 'to grasp' (= *ǯVʕV in the notation of *Opɨt sravneniya...*) > Kartv. *mǯ₁iγ- or *mǯ₁iχ- 'fist' (reconstructed by Illič-Svitɨč on the arbitrary assumption that Georg. mǯiγ- 'fist, handful' is a loan-word from a Zan language, i.e. from Megrelian or Laz) ‖ Sem. "*ḏʕṯ 'to grasp' > Soqotri "ḏʕt" (today we know that the root in question is *√ĉγθ 'to grip' > Jibbali √ṯγθ, Mehri √ẓγθ, Soqotri √ẓʕt) (Il.-Sv., "Materialɨ k slovaryu nostratičeskix yazɨkov", *Ètimologiya 1965*, p. 371).

In the light of new information and new achievements in comparative linguistics etymology (1) is to be rejected (since IE *H⁽o⁾sdo- 'branch' can be better explained as belonging together with Sem. *χass- 'leafed branch' and Mong. aca(n) 'bifurcated branch' < N *qaʒə̄V), the K stem *ǯma- and Central Cush. *ʒan- 'brother' are to be removed from etymology (2), and in etymology (3) the K root contains *ǯ- rather than *ǯ- . It means that the correspondence HS "*ḏ" (i.e. *ĉ) : K *ǯ has no factual basis. Neither is there any basis for postulating a correspondence between HS "*ḏ" and Alt. *ǯ (since Altaic data do not appear in any of the etymologies). Hence there is no reason to assume that HS "*ḏ" corresponds to voiced consonants in other Nostratic languages. On the origin of HS *ĉ see below (D, etymological entries (35)-(51)).

In my reconstruction I have a Nostratic phoneme labelled *ǯ, but it has nothing to do with what Illič-Svitɨč denoted by this symbol.

C. V. Illič-Svitɨč was quite right in supposing that there must be voiced counterparts to the voiceless sibilants in Nostratic (a *z as a counterpart for *s, etc.), but he could not find more than two etymologies for such *z-phonemes: one for an alleged *z (reinterpreted by me as an affricate *ʒ), and one for *ź (with "uncertainty brackets" for the phoneme in question).

Today we can be more positive in this respect. There are sound correspondences which I prefer to interpret as evidence for pN *z, *ž and possibly *ź:

N	IE	Sem.	Eg.	Chadic	Kartv.	Uralic	Turkic	Mong.	Tung.	Drav.
*z	*H	*z	z	*s (JS s_1)	*z	*s		s	*s	*c
*ź ?	*H	*z			*z	*ś	*s- ?			
*ž	*H	*š	z ?		*z	*š			*s,?*-ǯ-	*c.

For the sake of differentiation cp. the phonologically nearest phonemes: the voiceless sibilants and the voiced affricates:

N	IE	Sem.	Eg.	Chadic	Kartv.	Uralic	Turkic	Mong.	Tung.	Drav.
*s	*s	*š	s ("ś")	*s₁	*ṡ	*s	*s	s	*s	*c
*ś	*s	*š	s	*s₃	*s	*ś	*s	s	*s	*c
*š	*s	*š	s	*s₃	*š	*š	*s	s	*s	*c
*ʒ [3]	*s	*z			*ʒ̇, *z	*s	*j-	ʒ	*ʒ́	*c
*ʒ́	*s	*z	z ("s")		*ʒ, *z	*ś-?	*j-	ʒ	*ʒ́	
*ǯ	*s	*δ			*ǯ		*-δ-	ʒ	*ʒ́	.

Examples of N roots (originally words) with voiced sibilants:

* z :

(4) *z⌈e⌉rd∇ 'to feed, rear', 'to grow' (> 'to be fed, reared') > K *zrd- (or *żrd-) 'to feed, bring up' ‖ S *√zrd (or *√δrd) 'shoots, sprouts' ‖ IE *Hordʰo- 'erect', 'growth', *Hordʰ- 'to grow, rise' ‖ ? U *serä (or *sērä) 'old (of age), grown up' ‖ D *ceŗ- 'to thrive, grow'.

(5) *toχUz∇ 'to plait, wattle' > K *tχaz- 'to plait (together)' ‖ HS: Chad. (according to Jungraithmayr and Shimizu) *√tkʷs₁ (> Ngizim tákʷs₃ 'to tie', Glavda tákʷas, etc.) ‖ IE *deH(y)- > *dē-/*də-, *dēi-/*dĭ- 'to bind' ‖ FU *tos∇ 'a vessel, basket' (← *'a wicker basket' ← *'a wattled object') ‖ ?? Mong. taɡsi 'a cup'.

* ž :

(6) *žE⌈ś⌉χ|q∇ 'blood' > K *zisχl̥- 'blood' ‖ HS: ? Eg. zχn 'flesh (sp.)' ‖ IE *hesx-r̥ / *h̥sx-n- 'blood' ‖ ? FU (in Ob-Ugr. only) *čośk∇ or *čokś∇ (by assimilation from **šośk∇) 'blood' ‖ Tung. *sä:ksä (< *sä:s-ksä) 'blood' (*-ksa/*-ksä is a suffix of uncountable nouns).

(7) *žom⌊∇⌋r∇ 'dream' > K (derived words) *(s)i-zmar- 'a dream', *zman- (< **zmar-n-) 'to dream' ‖ HS: ? WChad. *sa:m- 'to sleep, dream' | S *√šmr 'to be/keep awake in the night' (← *'to doze, be half asleep') ‖ IE *Hon(e)ro- or *hʷen(e)ro- > Late IE *oner- 'dream' (*-nr- < *-mr- by assimilation) ‖ U (FPerm. only) *šo⌊m⌋pr∇ 'to dream, to day-dream' (*-mpr- < *-mr-)'.

(8) *žUr⌈i⌉ 'to watch, spy' > K *zwer- (or *żwer-) 'to spy, peep' ‖ S *šūr- (or *θūr-) 'to behold; to watch stealthily, lie in wait' ‖ IE *⌊H⌋wer- 'to look, look after, pay attention', *⌊H⌋worό- 'attentive', *⌊H⌋wor-ah 'attention' ‖ ?? Mong. sori- 'to examine, try out, test'.

(9) *baže 'to ripen, be cooked (gar werden)', 'to cook' > K *baz- (or *baż-) 'to ripen' ‖ HS: S *√bšl 'to ripen, be cooked' ‖ IE *bʰeH-/*bʰoH- 'to warm, to steam, ? to roast' ‖ ? Mong. baʒaɡa- 'to prepare, to get or have ready' ‖ FU (in FPerm. only) *paše 'to fry , bake, roast'.

* ź :

(10) *⌈źä⌉rga 'to ram, strike' > K *zerg- (or *żerg-) 'feststampfen, festtreten (z.B., Erde)' ‖ S *√zrg > Arab. √zrǧ 'frapper avec le fer du bout inférieur de la lance' ‖ ? IE *Hergʰ- (act. voice) 'to shake', (medium) 'to jump, dance' ‖ ? FU *śärk∇ (or *ŝ-) 'to break, to fell' ‖ ? Turkic > OTurk. särk 'earthenware and broken pieces of it'.

(11) *źoɡ|vru|ü (or *źorɡ|vu|ü) 'line/boundary/strip of land between geographical objects/areas' > K *z|żγwar 'border, boundary' ‖ IE *⌊H⌋worw(o)-, *⌊H⌋wrw(o)- 'boundary, boundary-ditch, moat', *⌊H⌋werw- 'furrow, grove, line' ‖ FU *śor∇ ' small area between geographical objects, strip of land'.

[3] My former hypothesis on the reflexes of pN *ʒ ("O nostratičeskoy sisteme affrikat i sibilyantov: korni s fonemoy *ʒ", *Ètimologiya 1972*, Moskva, 1974, pp. 163-175) is to be revised in the light of new evidence.

In etymology (10) the exact identity of the initial voiced sibilant depends on the semantically dubious FU reflex. It means that we have only one unambiguous example of the phoneme *ź (etymology (11)), which is not enough for any positive conclusions. Hence this phoneme, although theoretically expectable, remains questionable.

Uralic is the only daughter-language distinguishing all three voiced sibilants. Semitic does not distinguish *z from *ź, but keeps both of them separate from *ž. Hence in a root with a voiced sibilant without Uralic and Semitic representation we cannot distinguish among *z, *ź and *ž, which is symbolized as *Z (unspecified voiced sibilant). Wherever we have no reflexes in Uralic, but do have them in Semitic, *z is not distinguished from *ź. This latter case will be symbolized as *z|ź.

(12) *z|źorV 'to be foreign, hostile' > K *zar- (or *żar-) 'to hate, detest' ‖ S *zar- 'foreign, foreigner, enemy', whence a denominative verb *√zʔr ~ *√zwr 'to be foreign, hostile' ‖ IE *Her- 'to be angry, hostile' ‖ Tung. *sorι- 'to fight', *sorι-n 'fight, battle'.

(13) *Zig⌈o⌉dV 'stake, peg', (→) 'paling, fence' > K *zγude 'fence, wall' ‖ IE *Hod^h-/*Hed^h- 'Zaunstecken, Zaun aus Pfählen' ‖ Tung. *sigdi- 'peg' ‖ D *ci⌊:⌋t- 'bamboo pin'.

(14) *ZVrV (= *ZürV < *ZirU?) 'to fear, frighten' > K *zar- (or *żar-) 'to frighten; horror' ‖ Mong. süre- 'to awe, inspire horror' ‖ D *cūr- 'to frighten'.

D. Illič-Svitič reconstructed two lateral obstruents in proto-Nostratic: a voiceless fricative *ŝ (labelled by him as *š́) and a voiced lateral fricative *ẑ (labelled as *ǵ), but he could find only few roots containing pN *ŝ and very little reliable evidence for *ẑ.[4]

Now, in the light of new information available today, we are in a position to reconstruct a complete set of lateral obstruents: fricatives *ŝ and *ẑ and affricates *ç̂, *ĉ and *ĝ:

N	IE	S	B	Eg.	Cush.	Chadic	Kartv.	Uralic	Turkic	Mong.	Tung.	Drav.
*ŝ	*s	*ŝ	*s	š	*ŝ		*ṡ	*ŝ	*s	s	*s, *-l-	*c
*ẑ	*l	*ŝ		š	*ŝ	WCh.*ẑ-	*l(?)	*-ẑ-,*l-		-l-	*-l-	*n-,*-ṭ-
*ç̂		*ç̂			*ç̂		*ċ	*ć,*ŝ			*ć-	*c-,? *-ṭṭ-
*ĉ	*ks-?	*ŝ		š-		WCh.*ŝ	*ċ	*ŝ-	*č-?	s-??	*ć-	*c-
*ĝ	*l, *s-[5]	*ŝ			*ŝ	Ch.*ŝ	*ȝ	*ẑ ?		ȝ-	ǯ-	

Cp. the reflexes of pN *-lʕ- (which resemble partially those of *ẑ):

*lʕ	*l	*lʕ	ʕʕ,nʕ	Bj.lʕ	*l ?	*-ẑ-	*-l-	-l-	*-l-	*-ṭ-.

Nostratic roots with lateral obstruents:

*ŝ :

(15) *ŝah⌊a⌋ra 'moon, moonlight', (→) 'bright, pale (as moon)' > HS *ŝVhVr > S *'ŝahar- 'moon', *√ŝhr 'bright as moon, pale' | Cush. (according to Ehret) *ŝeh- 'moon' ‖ ? U *ŝ|śarV- 'to be bright' (→ 'to dawn'), 'white' ‖ Mong. *sa|āra 'moon'. Cp. otherwise Illič-Svitič MS 363 s.v. *ćohrʌ 'bright'.

(16) *ŝüLʕä 'heart', (?) 'breast' > HS *√ŝlʕ > Eg. šnʕ 'chest' | ? S *⌈ŝ⌉u⌈ʕ⌉l- or *⌈ŝ⌉ul⌈ʕ⌉-

[4] In a paper published in 1972 ("Nostratičeskie korni s sočetaniem lateral'nogo i zvonkogo laringala", *Ètimologiya 1970*, pp. 356-369) I found that in some roots Uralic *ẑ goes back to a pN cluster *lʕ or *lγ. From this observation (which is still valid today) I drew the conclusion that there was no basis for postulating a pN *ẑ. But recently I have found roots which do require a reconstruction of a Nostratic *ẑ.

[5] The regular IE reflex is *l, while *s- appears in the presence of a stem-medial *-r- (a law of *l — *r-incompatibility).

> Akkad. šūlu 'ein Totengeist (?)' |Cush. *ʃʕ)∇2ʕ- (assimilation from *ʕ∇1ʕ-) > ECush. *sazʕ- (< *saẓʕ-) 'heart' ‖ U *ʕüẓä(me) 'heart' ‖ Mong. sülde 'soul, protecting genius' ‖ Tung. *s∇1ämä 'heart'. An alternative pN reconstruction is *ʕüẓʕä, but it does not acdount for Eg. n in šnʕ 'breast' and for S *l in Akk. šūlu.

(17) *nɲaqiʃʕa) 'nose' > S *√nχʕ (derived noun) 'bone of the nose' ‖ IE *neHs-/*nHos- 'nose' ‖ Tung. *nɨaksa ~ *ŋɨaksa 'nose'.

(18) *ʕiÎ∇(-m∇) 'to look, examine' > U *ʕiĺmä 'eye' ‖ Mong. sili- 'to choose' ‖ Tung. *sɪlma- 'to examine, choose'.

(19) *ʕälɪ∇ɟχU 'to cut asunder' > K *ʕsχ(a)l-/*ʕsχwl- 'beschneiden' ‖ S *√ʕlχ 'to cut asunder' ‖ FU *ʕäl'ü) 'to cut' ‖ D *cal- 'to split, cut asunder'.

(20) *Küʕʕ∇ 'to fell, fall' > K *guʕs- 'to fell, bring down' ‖ S *√ḳʕʕ 'jeter quelqu'un par terre de manière qu'il tombe la face contre la terre' |? Chad. (Jungr.-Shimizu) *√(N)gʔ 'to fall' ‖ Tung. *ɪχɟul- 'to crumble, come down, collapse'.

(21) * boʃʕ)ʕ|γ∇ 'breath' (→ 'odor', 'steam, smoke') >S *√bʕʕ 'to be/become disagreeable in the odor of the mouth' ‖ FU *poše 'breath, smoke' ‖ T *būs 'mist, fog, steam' ‖ Tung. *bol- 'to blow (wind)' (in Tung. *-l- < *-ʕʕ- by assimilation from *-ʕʕ-).

(22) *ʕʃü)ʟʕ∇ or *ʕʃü)ƶ∇ 'dew' > FU *ʕuža 'hoar-frost, frozen dew' ‖ Tung. *silä-(ksä) 'dew'.

(23) *ʕäḳ∇ 'to split, cut asunder' > ? K *ʕsḳd- 'bersten, platzen, absplittern' ‖ S *√ʕḳḳ 'to split' ‖ IE *sek- 'to cut' ‖ FU (in Ob-Ugr. only) *ʕäKr∇- 'to chop, cut' ‖ T *sök 'to tear apart, break through an obstacle' ‖ D *caekk- 'to chip'.

*ĉ :

(24) *ĉ∇ɪʔɟN∇ 'to recognize, know (connaître)', (?) 'to see' > K *ċan-/*ċn- 'to recognize' ‖ S *√ʕʔn 'to know (connaître)', *√ʕny 'to see' ‖ U *ʕuŋ∇ (or *ʕuŋ∇) 'to see', (der. stem) FU *ʕčunčʕ∇ > pVogul *ʕunš- 'to look at, glance'. Contrary to Illič-Svitič's opinion (OS I 201-2), K *ċan-/*ċn- cannot be compared to Demotic Eg. swn 'to know', Hausa sánì, Margi sɔ̀nì 'to know' (and related words in other Chadic languages), since these words represent HS *s₁-, which does not correspond to K *ċ-. For this HS root I have a different etymology (N *sunɲ∇ 'to feel').

(25) *ĉäɣUr∇ 'hair' > S *ʕi'ʕar-, *'ʕaʕar- 'hair', *ʕaʕar-at- 'a hair' | Cush.: CCush. *cɔgʷɔr 'hair', Lowland East Cush. *ɖogor 'hair'; my proto-Cush. reconstruction (1973) was *ĉagʷ∇r | Chad.: WCh. *ʕ∇H∇r (Stolbova's *ĉ∇H∇r) 'hair' ‖ FU (Ugr. only) *ʕägʃu)r∇ 'hair' ‖ ? Mong.: Script Mong. soir 'coarse long hair' ‖ D *cōŗa 'a hair'.

(26) *ĉeʃp)∇ 'heel, foot, part of leg' > S *ʕap- (or *ʕaHp- ?) 'foot, trace' | Cush.: Central Cush. *cāp- 'heel, sandals' ‖ U *ʕšewča 'part of leg' (sp.) ‖ Tung. *ča''ʃp)a'' 'heel (?)'.

(27) *ĉ∇χ∇ 'to burn' (tr.) > HS: Cush. (acc. to Ehret) *ʕaɬ(aw)- 'to burn' > SCush. *ʕah-, etc.) ‖ K *ċχ- 'to be hot (hot weather, sun)', *ċχe- 'heat, hot weather, fever'.

(28) *ĉoţ∇ 'to exercise magic forces' (→ 'to curse', 'to bless') > K *ċcodw- 'to sin', 'sin' ‖ S *√ʕwţ (→ *√ʕyţ) 'to harm by magic' (→ 'to slander', 'to insult', 'to cause somebody's death'), *√ʕţn 'to bear ill-will, to be hostile' | Eg. štm 'to slander' ‖ U *ʕotʃa)'(magic) force' (→ 'to curse', 'to bless') ‖ D *coţţ- 'defect, blame', (←) 'insinuation, disparaging remark'.

(29) *ḳaʃč)U 'to scratch, to scrape off scales' > K *ḳaḍçwr- (assimilation from *ḳaċwr-?) 'to scratch' ‖ S *√ḳšš, *√ḳšw 'to rub, wipe, bark', *√ḳšr 'scales', 'to scrape off scales' | Omotic: Kaffa ḳučč- 'to scratch' | ?WCh. *qʷaʃsa (St.'s *qʷaĉʃsa) 'itch, scab', 'to scrape' ‖ IE *kes- 'to scratch, scrape', *kseu- 'scaben, reiben' ‖ D *kacc- 'itch', 'to scratch for relief'. Illič-Svitič (OS I 343-4) compared the S, IE and D roots and reconstructed the N root as *ḳaʃ∇.

*s̄|c̄ (ambiguous cases in which we lack evidence to distinguish between N *s̄ and *c̄) :

(30) *räs̄|c̄V 'to sprinkle', (→ ?) 'dew, moisture' > S *√rs̄s̄ 'to besprinkle' ‖ IE *rŏs-, *ros-ā 'dew, moisture' ‖ FU *räsV 'to sprinkle', (→) 'to moisture' ‖ ? Mong. nesi 'blood from an animal or a sword'.

(31) *s̄|c̄ˈoˀhyV or *s̄|c̄ˈoˀhi 'to wish' > S *√s̄hy/w ~ *√s̄wy 'to wish' ‖ FU *s̄ōyV (or *s̄ōyV) 'to wish, to strive'.

? (32) *ˈwˀokV s̄|c̄V 'a canine (sp.)' > S *kVs̄- 'wolf' or sim. | Berb. *√wˈskˀn 'jackal' ‖ FU (in Ob-Ugr. only) *ˌwˌoks̄VrV 'fox'.

(33) *c̄|s̄arV 'to be dry' > S *√s̄rr 'to dry' | Eg. w-šr 'trocknen, verdorren', s-šr 'trocknen (tr.)' ‖ IE *ksĕro- 'dry', *ksĕr-j- 'to dry' ‖ FU *s̄arV 'to become dry' ‖ ? D *car- 'rough of surface, coarse'.

(34) *s̄|c̄iɬ|lU 'to take (away, off, up)' > S *√s̄lw ~ *√s̄ll 'to take, take away/off' ‖ IE *sel(wo)- 'to take, grasp' ‖ FU (in Ugr. only) *s̄iɬ̈lV 'to acquire' ‖ D *ciɬˈiˀ 'to take off'.

(34a) *s̄|c̄opV 'to sew (leather), leather' > S *√s̄pyw 'to sew (leather)' | CCh. *s̄Vp- 'to sew' ‖ FU *s̄opa 'cloth(es)' '‖ Mong. sabkin 'leather' ‖ Tung. *sŏbgŏ 'fish-skin used as leather'.

*c̄ :

(35) *rEc̄ˌVˌχV 'to wash' > S-*√rh̄c̄ (metathesis from **√rc̄h̄ ?) 'to wash' ‖ K *rċχ- id. (deglottalization of the expected *c̄̇ due to assimilation: *-c̄̇χ- > *-ċχ-) ‖ ? Mong. nisqa- 'to wash a corpse'.

(36) *c̄oypVʕˈaˀ 'mud, clay, slush' (→ 'filth, dung', 'litter') > S *√c̄pʕ 'excrement, filth' | Cush.: SCush. *c̄ūf- 'mud', ? ECush.: Saho ḍōbo 'mud' or ECush. *subʕ- ~ *sibʕ- 'mud' ‖ U *s̄s̄oywa 'clay' ‖ Turk. *čöp 'sediment, dregs' ‖ ? D *cav- 'fuller's earth, sediment'.

(37) *c̄ˈüˀˌ?VˌÍV 'little, small' > K *c̄̇ul₂- (Klimov's *ç₁uz₁-) '(male) child, boy' ‖ S *√c̄?l > Arab. √ḏ?l 'parvus, tenuis, vilis et macilentus fuit' ‖ U *c̄ˈeˀÍV 'a small thing' and possibly *c̄äÍV 'the small finger' ‖ Mong. cölüi(d)- 'to diminish, be reduced' ‖ D *cill- 'small'.

(38) *c̄̇VmˌVˌ3ˀV 'to plait/tie together' > S *√c̄̇md (dissimilation from Prae-Sem. **√c̄̇m3?) 'to tie/bind together, to attach' ‖ K *c̄̇maś- 'to plait/braid together' ‖ ? U (in Samoyedic only) *ʕˀimʕˀa (assimilation from **s̄imsa?) 'zusammenwickeln, umwickeln' ‖ ?? Mong. camcay 'shirt'.

(39) *wec̄̇E?V 'to go out' > S *√wc̄̇?, *-wc̄̇i?- 'to go out' ‖ IE *wesk-, (?) *west- 'to go (out, away)' ‖ D *vecc- 'to take out'.

(40) *c̄̇Vh̄wˈiˀ 'to burn' (tr.), (→) 'to warm intensely, to be hot (of the sun)' > S *√c̄̇hy 'heat of the sun' | SCush.: proto-Rift *c̄̇ah- 'to warm (of the sun)' ‖ K *c̄̇w- 'to burn' (tr., intr.), 'to be very hot' ‖ ? Turk. *čabār 'kindling' (T *-b- < N *-w-).

(41) ? *c̄̇apV 'to grasp, take' > K *c̄̇ap- 'to grasp, take, acquire' ‖ S *√c̄̇bt̄ 'to take' ‖ Tung. *čap- 'to grasp'. The root is ideophonic and hence dubious.

(42) *ńac̄̇V(qV) 'to moisten, be moistened' > S *√nc̄̇χ 'to irrigate, sprinkle' ‖ IE *yes- 'to seethe, ferment, stir' (← 'to be moist' ?) ‖ FU *ńaćˌkˌV 'moist'. In U and S there is partial influence of the paronymic N root *ńačˌVˌh̄A (> U *ńäčä 'moist', ?? S *√nc̄̇h̄ , cf. Illič-Svitȳč MS 333), whence the blended root variants: U *ńačkV 'moist', S *√nc̄̇h̄ 'to irrigate, sprinkle'. The K root represented by Svan nic 'moist' is likely to belong to one of these two roots.

(43) ?? *kˌUˌyˌmVˈc̄̇ˀV ≈'shin, thigh' > K *kwVnc̄̇Vχ|q- > Megr. kwinc̄̇ixe 'thigh' ‖ S *kˈuˀymVˈc̄̇└ 'shin, thigh, leg' | Cush. *kʷanc̄̇-/*kunc̄̇- 'buttocks' and Beja kemūs (Reinisch) id. A very questionable root.

(44) *γˈäˀc̄̇V 'to cut, cut asunder' > K *γec̄̇- > Megr. γac̄̇- 'scheren, schneiden' ‖ S *√ʕc̄̇w 'to cut asunder, divide', *γic̄̇- 'piece, portion' | Eg. ʕ3 'hacken' | Cush.: ? SCush. *hac̄̇- 'to be separated, divided up' ‖ ?? U (in Samoyedic only) *ʕyˀˈiˀˈs̄ˀV (or 1 *Í-, 2 *-u-, 3 *-s̄ək-) 'to cut' (*-i- < *-ä- due to the influence of *y-) ‖ D *ac- 'to cut'.

(45) *ç̣V̄H⌊V̄⌋mV̄ 'daylight' > K *ċam- 'morning' ‖ HS: SCush. *√ç̣hm 'day, daylight' ‖ ? Mong.: Script Mong. comur 'clear'.

(46) *pV⌈ç̣⌉U 'a hair, eyelash' > K *p⌈i⌉ċw- 'eyelash' ‖ HS: Chad. *m-PV̄⌈ç̣⌉V̄ > WChad. *m-PV̄⌈ç̣⌉V̄ 'hair' ‖ ? D *poṭṭa 'eyebrow' or 'eyelash'.

(47) *ḳ⌈ü⌉ç̣V̄ or *ḳeç̣U 'to tear, to skin' > ? K *ḳuċ̣ç̣- 'zerhauen, zerstückeln' ‖ HS: S *-ḳīç̣-/*-ḳūç̣- 'to tear, to separate, to skin' ‖ FU *küŝV̄- ~ *keŝV̄- 'to tear, to bark, to flay'.

(48) *ç̣i|up̣V̄ 'to be narrow, compressed' > HS: S *√ç̣pp ~ *√ç̣bb 'to be narrow, compressed'| Cush.: CCush. *√cbb 'to be narrow, straitened' ‖ FU *ŝ|śuppV̄ 'schmal, eng' ‖ Tung. *ćīp- (or *tīp- ?) 'to choke with smth.'.

(49) *ç̣aŋV̄ 'to jump, skip' > S *√ç̣md 'to jump'‖ FU *ŝaŋV̄ 'to gallop, jump' ‖ ?? Tung.: Nanay ćaŋgoar, ćaŋsoap 'quickly, suddenly' ‖ D *caŋk- 'to jump, leap'.

(50) *ç̣abV̄?V̄ 'war', 'warriors, army' > S * ç̣b? 'to wage war', *ç̣abaʔ- 'war, army', Eg. ʒbi̓ 'army' (l.-w. from Semitic?) ‖ Tung. *ćab⌊u⌋ka 'army, war'.

(51) *ç̣arʔV̄ 'nipple, teat', 'udder' (→ *'chest' →) 'front' > S *ç̣arʔ- 'nipple, teat', 'udder' ‖ FU *ŝ|ś⌈ä⌉rV̄ 'front', (→ 'earlier') ‖ ? Mong. cara- 'to prepare, advance, prevent' (← *'to be ready earlier') ‖ D *car- 'udder'.

* ç̣|ĉ (ambiguous case):

(52) *ç̣|ĉV̄HLV̄ 'to be compassionate, have mercy' > K *ċ̣qal- id. ‖ S *√ŝhl (deglottalization from *√ç̣hl ?) 'to be gracious, have mercy, be compassionate'.

* ẑ :

(53) *ʔEẑEkU 'thorn, hook' (→ 'tooth') > S *ŝikk-(at-) 'thorn', 'pin, nail' | Cush. (after Ehret) *ʔiŝkʷ-, (to my opinion) *ʔiŝikʷ- 'tooth' > SCush. *ʔīšíkʷa, ECush. *ilV̄kkʷ- id., CCush. *əRkʷ- id. ‖ Tung. *ä̋lgö̋ 'hook, 'fish-spear', 'bear's fang' ‖ Mong. elgü-, ölgü- 'to hang (on), suspend', elgün qada- 'to nail onto (as pictures on the wall)'.

(54) *śüẑ⌊V̄⌋χV̄ 'to glow, burn' > K *sχ⌈u⌉l- or *cχ⌈u⌉l- > Svan cχul- 'опалить, обжечь' ‖ IE *swel- 'to glow, burn' ‖ U *śüẑe 'embers, charcoal' ‖ ? Mong. sülü 'incense' ‖ Tung. *sul⌈u⌉- 'flame' ‖ D *cuṭ- 'to be hot, burn (intr.)', 'to roast, burn (tr.)'.

(55) ?? *ẑomV̄ 'heat' (→ 'sun') > S *'ŝamaš- 'sun' | Eg. šm, šmm 'to be hot' | WChad. *ẑ|lV̄m- > Angas lem 'sun' ‖ FU *lomV̄ (or *l̥omV̄) 'warmth, flame, embers'. Semitic *'ŝamaš- 'sun' is likely to go back to a word group *ẑamV̄ mV̄ʒ̄V̄ 'hot/burning sun/fire', with the second component *mV̄ʒ̄V̄ represented in K *mże 'sun' and Berb. *√ms 'fire', cf. below item (61).

(56) *ẑä⌈Ḳi⌉dV̄ 'to move, go' > S *√ŝkd 'to give' (← *'to move (tr.)') | Chad.: WChad. *ẑ|ʒ̄akV̄⌈d⌉- (Stolbova's *ŝ|ʒ̄akAd-) 'to move'‖ IE *leit-/*lĭt- 'to go' ‖ FU *läkte- 'to go, go out' ‖ D *naṭ- 'to walk, go, pass'.

(57) ? *ẑEńćV̄ 'chest' > U *ŝü(ń)ćä 'breast','Inneres' ‖ D *neńc- 'chest, heart'. IE *leisd-, *loisd- 'Rand, Saum' might well belong here (from the point of view of regular sound correspondences), but the semantic change involved is complicated and therefore dubious.

* ʒ̄ :

(58) *ʒ̄apV̄ 'lip', (→) 'edge, shore, riverbank' > HS: S *ŝap-at- 'lip', 'shore, riverbank' | Eg. sp.t (Erman-Grapow's śp.t) id. (loanword from Semitic?) | Cush.: ? SCush. *ŝūf- 'lip' | ? Chad.: Hausa lèḅé:, Kirfi lɔ́vɔ̃k 'lip' ‖ IE *lab-yo-(m), *lab-uro-(m), *lab-s- 'lip' ‖ Mong. ʒabaʒi 'corner of the mouth' ‖ Tung. *ʒ̄apka 'edge, shore, riverbank'.

(59) *ʒ̂ir⌜u⌝ 'root' > K *ʒ̇ir- 'root, bottom' ‖ S *'ŝi|uraw- 'sinew, root' | Berb. *√zwr (*zūr, *zwVr-) 'root, vein' | Central Cush. *zir 'root' | pChad. *√ŝ₂rw 'root' (according to Jungraithmayr and Shimizu) > WCh. *ŝarwa- ~ *ŝarya id., CCh.: proto-Mofa-Mada *ŝiray 'root', EChad.: Ndam sírwé 'root', etc. ‖ IE *ser(w)- 'vein, thread', (→) 'string', 'to join in a string' ‖ D *cīr- 'root'.

(60) *ʒ̂imV 'to put, to place' (→ 'to do') > K *ż|zm- 'to do' ‖ S *ŝīm- 'to put, place, set' ‖ Mong. ʒime ~ ʒeme 'conduct, manner of behavior, procedure' (← *'doing, manner of doing').

(61) ? *mVʒ̂V 'fire (especially as source of heat)' (→ 'sun) > K *mż-e 'sun' ‖ HS: Berb. *-misī- 'fire' | ?? Central Chadic *√gmẑ 'fire' (a composite root with the second element *-mẑ-?) ‖ IE *molko- 'firewood, fuel' ‖ ? D *mūḷ-/*muṭṭ- 'to kindle a fire'. Cp. Illič-Svitič OS II 77-78 (*mʌ/ź/ʌ, i.e. *mV⌜ź⌝V 'bright, sun') and Dolgopolsky in *Voprosi yazikoznaniya* 1964: 2, p. 54, where K *mż-e was compared to the Semitic root (then erroneously reconstructed as *šmš and interpreted as reduplication).

(62) *ʒ̂a|oḳV (~ *ẑaḳV) 'to push, throw' > K *ʒ̇Vḳ 'to kick' ‖ S *√ŝḳḳ > Arab. √šqq 'to grow (tooth, plant)', 'to pass through (a thong)' | Chad.: ? WCh. *ʒik|q- 'to push' ‖ IE *lak|k- (or *lag|g-) 'to kick' ‖ FU *ẑokkV 'to push, butt'.

Symbols: ◻̣ — glottalized consonants (ejectives ṭ, ḳ, q̣, etc., injectives ḅ, ḍ); ◻̤ — uvularized consonants ("emphatic consonants" in Arabic and Berber); ◻̣ — postalveolar or cacuminal (retroflex) consonants (ṭ, ḷ, ṇ, ṛ); c, ʒ — hissing affricates (as z in German and Italian) and sibilant affricates without opposition of hissing and hushing consonants (in Dravidian, Mongolian and Central Cushitic); ǧ — Arabic ج (g > ǯ,ž); q, ɡ — uvular stops; x, ɡ — velar fricatives; χ, γ — uvular fricatives; ħ, ʕ — epiglottal continuants (Arab. ح, ع); ⌂ — lateral obstruents (ŝ,ĉ,ẑ,ʒ̂); ɜ — central mid vowel; ä, ö — in Tungusian vowel harmony it is the higher grade ([ɜ], [ɔ]) of the vowel alternation ä/a, ö/o; V — unspecified vowel; E — unspecified front vowel; U — unspecified rounded vowel; H — unspecified laryngeal consonant; K — unspecified velar stop.

Uncertainty symbols: *a|b = "*a or *b", *⌜a⌝ = "*a or sim."; *⌞a⌟ = "*a or zero"(*'ḳar⌞a⌟n- = "*'ḳaran- or *'ḳarn-").

ON LATERAL OBSTRUENTS IN HAMITO-SEMITIC

Aron Dolgopolsky

Lateral obstruents exist in three branches of Hamito-Semitic: in Semitic, Cushitic and Chadic.

In proto-Semitic there are two lateral obstruent consonants:

1. *ŝ > Modern South Arabian (Mehri, Ḥarsusi, Jibbali, Soqotri) ŝ, Old South Arabian (Sabaic-Minaean) 𐩮 (ŝ), Ancient Ethiopian ሠ ŝ, Hebrew שׂ ŝ, Ancient Phoenician 𐤔 ŝ (as in בשם > Greek βάλσαμον 'aromatic balm'), Aramaic ס s, Arabic, Akkadian š;

2. *ŝ̨ (or *ŝ̱) > Jibbali ŝ̱ (Johnstone's ẕ̲), Mehri, Ḥarsusi, Soqotri ẑ, Hebrew ץ ç, Ancient Aramaic ק (most probably q) > Middle Aram. (Jewish East and West Aramaic, Syriac, etc.) ע ʕ, Old South Arabian ϑ ç̣, Ancient Ethiopian ፀ ç̣ (later ç), Ancient Arabic ض ẑ̲ (later merged with ظ ẓ̲ to Bedouin Arabic ẓ̲ and to ḍ̲ in the urban dialects; it has remained ẑ̲ in Daṯīna Arabic), Akkadian "ṣ" (i.e. ç). In the modern artificial orthoepy of reading Qoran and Classical Arabic the letter ظ is read as ẓ̲ (which is correct from the point of view of the real history of Arabic) and ض is pronounced as ḍ̲ (which is wrong). It is on this artificial pronunciation of Classical Arabic that the scholarly Semitologic traditional labeling of proto-Semitic *ŝ̨ (or *ŝ̱) as *ḍ̲ or *ḏ̲ is based. This notation makes the wrong impression that *ŝ̨ is a voiced consonant, something like d. Unfortunately, the misleading notation has caused much misunderstanding both within Semitology (i.a., among Ethiopists and Sabaeists) and especially among the outsiders who use Semitic data for external comparison.

In Cushitic as well we must reconstruct at least two lateral obstruents:

1. *ŝ > proto-South-Cushitic *ŝ (> Iraqw, Burunge, Alagwa ŝ, Ḳwadza, Asa ŝ-, -š-, -l-, Ma'a, Dahalo š), East Cushitic *l;

2. *ŝ̨ > SCush. *ŝ̨ (> Iraqw, Burunge, Alagwa ç̣, Ḳwadza ç̣, ʔ, Asa d, r, Ma's ŝ, Dahalo ç̣), ECush. *s-, *ḏ̲-, *-ḍ̲-.

There is an exact etymological correspondence between the Semitic and Cushitic lateral obstruents: S[emitic] *ŝ : C[ushitic] *ŝ, S *ŝ̨ : C *ç̣.

Some roots illustrating the correspondence in question:

(1) S *'šah₍a̯₎r- 'moon' = S[outh] C[ushitic] *še:he = E[ast] C[ushitic] *leʕ- id.; (2) ? S *√šʕb > Arab. šaʕab-'space between the shoulders' = SC *ša:b- 'chest' = EC *laʔb-/*labʔ- 'breastbone'; (3) S *√špp > Arab. √šff 'to increase' = SC *šáf- 'to grow'; (4) S *šbb 'grow, grow up' = SC *šab- 'foliage, vegetation' = EC *lab- 'leaf' (in Mashile and Gidole); (5) S *šδδ 'to be alone, isolated' (in Arabic) = SC *šaḍ- 'to clean up' = EC: Saho √ldy 'to shave'; (6) S *√šsʕ 'to cleave, tear apart' = SC *šáhāʕ- 'to remove piece of skin, leave scar' (< pC *√shʕ , cf. Beja -lehi

'abreißen, abschälen', (7) *√šhy ~ * šwy 'to wish' = SC *ša- 'to love, to like' = EC: Saho (Reinisch) luwa: 'hunger'; (8) S *šay- 'Kleinvieh' = SC *šè: 'cow' = EC *lo?- 'cow'; (9) S *šap-(at-) 'lip' = SC *šu:f- 'lip'; (10) S *√šhm > Arab. šaḥm- 'pulp, fresh part of fruit; suet' = SC *šá:ham- 'sweet'; (11) S *√škk 'to pierce' = SC *šà:kʷ- 'to stab, pierce'; (12) S *√(s)χw/y > Akk. šuχχū 'to exchange' = SC *še:h- id.; (13) S *-šūb- 'to mix up' (in Arabic) = SC *(u:)šu: 'the mixing and stirring of food' (cf. Eg. šby, šb(š)b 'mischen'); (14) S *√šrh 'to maintain in good shape', → 'to protect' = SC *ša(:ɹ)?ar- 'to live, endure, survive'; (15) S *√šwʕ ~ *√šyʕ 'to help' = SC *ša?- 'to leave off, let go, revive'; (16) S *√šḳḳ 'to appear, show up' = SC *ša(:ɹ)ḳʷ- 'to present, bring into view'; (17) S *√šmm > Arab. √šmm 'to be lofty', ?ašamm- 'high' = SC *šem- 'to rise'; (18) S *šām- or *√š?m 'to give in exchange, to exchange' = SC *ša(:ɹ)m- 'to leave (smth.), leave off': (19) S *√šhh 'sharp' = SC *šah- or *šaχ- 'sharp' (cf. Eg. šχ 'schärfen' ?); (20) S *√šχχ > Arab.šχχ 'to make water, to make urine flow in a stream' = SC *šàχ- 'to drop'; (21) S *šikk- 'thorn, pin, nail' = SC *?ìšíkʷa 'tooth' = EC *?ilk- or *?ilVkkʷ- 'tooth'; (22) S *-χūš- 'to take a thing' (> Arab.) = SC *húš- 'to get'; (23) S *√hhk(š) > Akk. akāšu 'to go' = SC *kʷà:š- 'to go, to travel' = EC: Saho (Reinisch) kala:h- 'verreisen'; (24) S *√wš? > Arab. waša:?- 'wealth' = SC: proto-Rift *waš- 'to get, take' (cf. Eg. ỉs.t 'Besitz'); (25) S *√pšš > Arab. √fšš 'to open the door', S *√pšw 'to be opened, disclosed' = SC *piš- 'to lay open' (cf. Berb. *√fsy 'to open'); (26) S *√kšš, *√kšt, *√kšp 'to uncover' = SC *kʷàš- 'to find'; (27) S *√ḳšš 'to become dry, dry up' = SC SC *ḳa:š- 'to dry by the fire'; (28) S *ba'šar- 'skin' → 'flesh' = SC *buɬí(:ɹ)šá 'hide, skin'; (29) S *√bšr > Arab. √bšr 'to peel, take off the bark' = SC *baš- 'to be stripped bare or clean'; (30) ? S *√nçḍ > Arab. √nḍḍ 'to pile up' = SC *çe:d- 'log, tall' = EC *ʂše:d- 'to be long, high'; (31) S *√çpʕ 'excrements, to defecate' = SC *çu:f- 'mud' = EC *sub?-/*sib?- 'mud' or Somali ḍo:bo 'mud'; (32) S *√çw? > Arab. √ḍw? 'to shine, be bright (light)' = SC: pRift *çaça?- 'afternoon' = EC *sa?- 'morning'; (33) S *-ḍʂūḳ-, *√wḍçḳ 'to pour' = SC *çu(:ɹ)ḳ- (or *ⁿsu(:ɹ)ḳ-) 'to fall' = ? EC: Somali sa:qíd- 'to fall'; (34) S *√çbh 'to pay duty, pay tribute' (> OSArabian, Eth.) = SC *çà(:ɹ)p- 'to pay', cp. Eg. 3b; 'bezahlen'; (35) S *çūg- > Geez √çwg, -çūg 'to be malignant, vicious' = SC *ça:kʷ- 'bad, ugly, evil' = EC *(s)Vk- > Oromo fokkisa: 'ugly'; (36) S *√çbʕ 'to strike, throw the hands for striking' = SC *çíbíʕ- 'to push' = EC: Oromo ḍi:ba, Sidamo ṭi:b- 'to push'; (37) S *√çwyp > Arab. √ḍwyf 'to deviate from the butt (arrow)' = SC *ça:f- 'to surpass' = EC *ḍab- 'to miss'; (38) S *√çpn 'to kick, overthrow' (in Arabic) = SC *çup- 'to knock (against)' = EC *ḍuf- (or *ḍuf-) proto-Sam *ka ḍufo 'to hit'; (39) S *ça'buʕ- 'hyena' = SC: pRift *çabakʷ- 'sp. spotted carnivore'; (40) *√hçb 'lasting rain, shower' (> Arab., OSA) = SC *çub- (or *lub-) 'to rain'; (41) S *√nçʕ 'to quarrel' (> Arab., OSA) = SC *ça:ʕ- 'to blame'; (42) S *√wçʔ 'to go out' = SC *ça?- 'to desert, run away'; (43) S *√çnk > Arab. ḡunāk-, ḡunk-at- 'rheum' = SC *çʌŋ- or *çʌng- 'to cool off, become cool'; (44) S *√çhyw > Arab. ḡāhiy-at- 'side' = SC *ça:h- 'temple'; (43) S *√ʕçç 'bone, cartilage' (> Arab.,MSA) =

SC *ʕóç̣- 'cheekbone' = EC: Konso aḍa 'cheek', Saho aḍa 'molar'.

The correspondences of lateral obstruents between Semitic and Cushitic suggest that these two phonemes of S and C belong to the proto-Hamito-Semitic heritage.

The situation in Chadic is more complicated and less clear, because for the time being historical phonology and etymology of Chadic (especially Central and East Chadic) have not been elucidated sufficiently and with enough details.:

In proto-West-Chadic Olga Stolbova reconstructs four lateral obstruents labelled by her as *ŝ, *ĉ, *ç̣ and ĵ (an additional and very questionable *ṣ̂ is likely to go back to a cluster laryngeal + *ŝ). In the stem-medial position there is an additional phoneme *ĉ₁. The representation of these "hlaterals" in sub-branches of West Chadic is as follows: A. In the initial position:

pWCh (Stolbova's notation)	Hausa	p-Angas-Sura	p-Bole-Tangale	p-Warji (NBauchi)	pZar (SBauchi)	Ron	Ngizim	pWCh (my interpretation)
*ŝ-	z-	*l-	*l-	*ẑ-	? *ẑ-	l-	ẑ-	*ẑ-
*ĉ-	š-,s-	*l-	*š-	*ŝ-	*ŝ-		ŝ-	*ŝ-
*ç̣-	ç-	*š-,*-z-	*ŝ-	*ṣ̂-	*ŝ-	š-	ŝ-	*ç̣-
*ĵ-	z-	*d-	*d-	*ĵ-		d-	ẑ-	*ĵ-

B. In the stem-medial position:

*-ŝ-	-l-	*-l	*-l-	*-ŝ-,*-ẑ-	*-ŝ-,*-ẑ-	-l-	-ẑ-,-ŝ-	*-ẑ-
*-ĉ-	-s-	*-s	*-ḍ-	*-ŝ-,*-ẑ-	*-ŝ-,*-ẑ-		-ŝ-,-ẑ-	*-ŝ-
*-ç̣-	-ç-	*-t,*-ḍ-	*-ḍ₁-	*-ṣ̂-	*-ŝ-,*-s-		-ḍ-	*-ç̣-
*-ĉ₁-	-ç-	*-s	*-s	*-ç̣-	*-ŝ-		s	*-ç̣₁- .

In my opinion, Stolbova's interpretation and labelling of the first two phonemes (her *ŝ- and *-ĉ-) contradict the internal comparative evidence of the WCh languages. One can easily see that wherever [1] the two phonemes have not merged, they are distinguished as voiced vs. voiceless rather than as fricative vs. affricate:

pWCh (Stolbova's notation)	Hausa Initial	Hausa Medial	Bole-Tangale	pWarji	pZar	Ngizim
*ŝ	z-	-l-	*l-	*ẑ-	? *ẑ-	ẑ-
*ĉ	š-,s-	-s-	*š-	*ŝ-	*ŝ-	ŝ- .

Therefore I prefer a different interpretation which is based on internal comparative evidence, namely that Stolbova's *ŝ is actually *ẑ, while her *ĉ is *ŝ.

The external correspondences of the WCh lateral obstruents, as far as the scarce etymological information available suggests, are as follows:

[1] The only (and hence uncharacteristic) exception is pBole-Tangale in the medial position where pWCh (St.)*-ŝ- > *-l- and pWCh *-ĉ- > *-ḍ-.

	West Chadic	Semitic	South Cushitic	East Cushitic
A.	*ŝaHar 'moon'[2]	*'ŝahar- 'moon'	*ŝe:he id.	*leʕ- id.
	*ŝapi 'leaf'	? *√ŝbb 'to grow, grow up'	*ŝab- 'foliage'	*lab- 'leaf'
	*ʃs̀ak- 'to stab with a knife'	*√ŝkk 'to pierce'	*ŝà:kᵂ- 'to stab, pierce'	
	*ŝa- 'to make smb. do smth.'	*√ŝwy ʕ 'to help'	*ŝaʕ- 'to leave off, let go'	
	*HVŝabi 'tree'	*χa'ŝab- 'Holz'		
	*ŝVHVf 'hair'	*√ŝʕp 'lock of hair'		
B.	*ẑaH- 'cattle'	*ŝay- 'Kleinvieh'	*ŝê: 'cow'	*loʔ- 'cow'
	*ẑap- 'to pierce'	*√ŝχp 'to pierce'		
	*ẑab- 'to mix'	*-ŝūb- 'to mix'		
	*ẑaḳᵂ- 'to wish'	*-ŝūḳ- 'to wish'		
	*bʊẑa 'door, to open'	*√pŝŝ 'to open a door'	*piŝ- 'to lay open'	
C.	*ʃç̀i- 'day'	*√çw? 'to shine, be bright' (light)	*çaça?- 'afternoon'	
	*çVr- 'long'	*√ʃç̀yr 'high' (> Akk.)		*dĕr- 'long'
	*çVrV 'green, unripe'	*√χçr 'green'		
	*ç̣af- 'to comb (hair)'	*√ç̣pr 'braid, to plait hair'		
	*ʅHVȷriç̣V 'earth'	*'?araç̣- 'earth'		

The above correspondences suggest that West Chadic has preserved a pHS phonological distinction (reflected as opposition WCh *ẑ : WCh ŝ) which has been lost in Semitic and Cushitic (unless a conditioning factor for a split of one pHS phoneme into WCh *ẑ and *ŝ is discovered). In addition, West Chadic data corroborate the reconstruction of a pHS *ç̣.

As to the rare WCh phoneme *ĵ, I cannot find any reliable cognates of it in other HS languages, except for the case of WCh *ĵirki 'cock', which is likely to be akin to Central Cushitic *dǰir'qᵂ- 'hen' (> Hamir ǰiruwa, pl. ǰirkᵂ, etc.) and to some similar words in Saho, Somali, Ometo and Ethiosemitic. The interpretation of this word is difficult, because it may well be a Wanderwort.

It is premature to discuss the data of Central Chadic and East Chadic and their significance for the proto-Hamito-Semitic reconstruction of lateral obstruents, so

[2] From here on the notation of phonemes is mine.

long as there is no Central Chadic and East Chadic comparative historical phonology and detailed etymology.

At the present state of research (by taking into account Semitic, Cushitic and West Chadic data only)we may suggest that at the proto-Hamito-Semitic level three lateral obstruents are to be reconstructed:

proto-Hamito-Semitic	proto-Semitic	proto-Cushitic	proto-WChadic
*ś	*ś	*ś	*ś
*ź	*ś	*ś	*ź
*ç̣	*ç̣ (or *ṣ)	*ç̣	*ç̣ .

LANGUAGE, HISTORY AND COMPUTATION
(Preliminary Report)

Alexis Manaster-Ramer

Two views of language—and of language change—have dominated the science of linguistics. The older one was substantive: language was what we hear spoken, and sound change was when one sound changed into another. The newer view is formal: an abstract system of relations codifies the apparent reality, and language change means a modification of the system. Most linguistic theories take the formalist position, and try to apply this to diachrony, e.g., Bloomfield's idea that only sound changes that alter a phonemic system count, or the generative theories of language change, but the practice of historical linguists has been unaffected. In fact, linguistics tends to accept Saussure's compromise: that diachrony is material, whereas synchrony is abstract—an idea based on his reluctance to abandon the view that sound change affects the "material substance of words" combined with his insistence that synchrony is a system of abstract relations. Saussure's dictum made no sense, especially of lexical and grammatical change. But he gave historical linguistics a temporary refuge from the ravages of theory, though it, and linguistics as a whole, lost much of the force and eloquence needed to speak to a world more, and more seriously, interested in language than ever before.

The Aristotelian paradoxes of form and substance have troubled other sciences (even if none ever went as far as Saussure), but they now know the solution. Thus, modern theories of heredity, unlike the epigenetic and preformationist views of the 1700's, explain inheritance with the notion of a program. A program looks nothing like the forms it produces out of simple substances but produce them it does. On similar view, the development, learning, and use of language is due to mechanisms that, unlike grammars, also do not resemble in form the behavior which they produce. Much of this was clear to Hermann Paul, Baudouin de Courtenay, Sapir, and Whorf, all of whom (unlike Saussure, Bloomfield, Jakobson, or Chomsky) saw that language involved a variety of specific mechanisms. Some of these are anatomical and psychological, and have their locus in the individual. Others are historical and cultural, and have their locus in the society. This last point was also recognized by Saussure, who placed his abstract system of relations in the minds of a whole community, not in the mind/brain of the individual à la Chomsky.

The materialist view of language is like saying that a legal system is defined by the paper and ink used to write down the laws. Not much better is the formalist notion of a system defined by the abstract content of the laws, so even if all copies of a statute are lost and its contents forgotten, it remains in the system. And Saussure gave us the worst of both worlds: the system is abstract, but we change it by, say, spilling ink over the text of a statute, or killing all the lawyers. The mechanistic view would recognize that all linguistic phenomena must be physically realized, as must the mechanisms that give rise to them, but so long as some mechanism is not particularly choosy, it may well work with a wide range of materials and may even persist in ovo while there are no materials to work with. The enactment of a law is a mechanism, to be sure, and so is the destruction of all copies of a statute, but there would be many others besides, e.g., the bribes paid to get certain laws passed or to avoid the enforcement of others. In other words, we would look at the origin, the growth, and actual functioning of the system.

Linguistics, especially historical, knows a lot of such mechanisms, even if we lack a comprehensive theory of them. A case in point is the question of whether sound correspondences between related languages are regular. This has been taken as an empirical fact and as an axiom, and it has been questioned both a priori and a posteriori. But the question is empirical and depends on the mechanisms operative when people substitute one sound for another. We do make regular substitutions (e.g., [h] for [x] when Americans speak Russian), but there are complications (e.g., the use of [x] in interjections, in what Sapir called abnormal speech, and in some foreign names). Also, there are different kinds of sound change: some are the work of children, others of adults; some take place only under contact with suitable foreign languages or dialects, while others are internally motivated, and so on. An important example of these complexities is that certain sounds are apparently very hard for a language to develop, but, once in place, easy to maintain, to grow, and even to lend to your neighbors (e.g., the Khoisan clicks). This indicates that developments such as the rise of clicks may be historically unique, on a par almost with cultural discoveries or inventions, and this in turn implies that language has undergone qualitative and possibly catastrophic changes, perhaps even in relatively recent history. Furthermore, we also see that the usual conception of what is and is not possible, natural, or unmarked in language will not work. This conception, whether in the work of Jakobson, Greenberg, or Chomsky, clearly defines the nctions of possible language, of naturalness, of markedness in terms of individual biology. Sounds that human beings find hard will be learned late, used rarely, and lost early—is the basic idea. The click data indicate that this is not so, since clicks are apparently acquired late by children, they very rarely originate in languages that do not already have them (the only well-documented example I know is from an Australian secret language), but at the same time, as noted, they are frequent and stable and rather easily transmitted to neighboring Bantu languages *once they are in the language.* Such facts as these, though sometimes neglected in our work, are the stuff that the next theory of language will made of.

A useful aspect of the mechanistic approach is that it weeds out many otherwise plausible hypotheses simply because there is no known mechanism to implement them. When plate tectonics was first broached, there was no suitable mechanism to move large chunks of the earth's surface around, and the theory was—quite correctly—not accepted until such a mechanism was found. Another example: Margaret Mead described a culture of free love in Samoa, but the young women she studied were not getting pregnant. No plausible mechanism, no free love in Samoa.

Turning now to linguistic prehistory, we can make better sense of this work on the mechanistic view of language than we could otherwise. Further, current work on remote relations leads, on this perspective, to a much richer and deeper understanding of the nature of language, of its biological foundation, of its universal laws. We come to realize that language is a historical phenomenon, related in specific and detailed ways to the biological and cultural history of man. We see in a new light and can hope to answer much more lucidly the question of why human language, and the individual languages, are the way they are. The mechanisms are going to be varied, and as often as not extra-linguistic, but that is as it should be, for the distinction between language and non-language must be demonstrated factually in every case where it applies. The matter is empirical.

Let me begin with a simple observation: The history of mankind is not just the story of diffusion and divergence, but also of confluence and convergence. Linguists treat any sharing of linguistic forms after an initial split as so much noise, since our classifications are always cladistic, based on divergences. But when folks borrow words, there is usually a wedding, except in relatively recent times (since the invention of writing and that of racism). Yet population genetics cannot distinguish the results of love making within as opposed to across a dialect boundary. A too-close fit between language and genotype should be highly suspicious. But the sword cuts both ways: when we do not find simple correlations (as in the case of Na-Dene, for example), that is perfectly OK so long as the genetic groupings that we do find can be reconciled with the linguistic ones historically. Divergent populations may now speak the same language, so long as they once

spoke different ones; and geographically scattered but genetically coherent groups that now speak the languages of their neighbors were likely linguistically homogeneous at one time. Thus, the pockets of Negritos along the Indian Ocean and southeastern Pacific point to a language family that once covered the area between Africa and Australia prior to being overrun by other languages, even if these people now speak other tongues. We can, and must, draw linguistic conclusions from non-linguistic considerations, and vice versa. Genetics and linguistics should jointly yield a consistent picture of prehistory, but there would be little point to merely duplicating each other's results. Ontology should not merely recapitulate philology. Again, language is just an abstraction; it is the prehistory of flesh-and-blood beings, our ancestors, that we are reconstructing. In fact, the whole insistence by linguists on pure cladistics, that is, classification according to the earliest possible split, should not be taken at face value. Not only because it takes away from the study of prehistory, but also because it obscures the true state of historical linguistics itself.

Thus, many of the recent proposals for remote relations involve affinities which were known before (e.g., Uralic with Indo-European and with Altaic). There can be no doubt that the massive correspondences between these are not accidental, but too many scholars were willing—in fact, eager—to accept the borrowing of such basic vocabulary items as 'to be' and 'water'. While this was wrong, in a way it helps make much of the case for Nostratic. If you just convince yourself that there are no mechanisms of borrowing powerful enough to achieve this, then you have the whole case. This is quite different from the situation of Amerind, or the question of whether Japanese is Altaic or Austro-Thai, where the choice is between relatedness of some kind (genetic or contactual) and mere coincidence. The questions only look alike if we ignore the realities of the mechanisms whereby languages get to resemble each other, and keep our nose to the grindstone of the linguistic cladogram.

This is not to say that I am disinterested in the question of genetic kinship. Far from it, because, when this is the case, it tells us a great deal about the prehistory of the peoples involved. But here again our task is aided by the realization that linguistic prehistory is not just a formal exercise of putting each language on the right twig of a family tree, but rather a part of the attempt to understand the mechanisms of divergence and convergence, linguistic and non, that got people to where we find them in historical times. For example, it is well known—but has not been considered relevant to the remote relations problem—that when you work with an established language family, like Indo-European, some subunits, e.g., Slavic, are much easier to establish than others, e.g., Balto-Slavic. The doubtful subclassifications do not occur at any particular level: Balto-Slavic is higher than Slavic, but many subclassifications within Slavic itself are also problematic (e.g., the old debate about the dialectal affiliations of standard Polish).

When we turn to macroclassification, we are in the same position, provided that we realize that such units as Nostratic are instances of subclassification of the genus language. The whole purpose of prehistorical linguistics is perverted, I think, when we turn it into an adversarial proceeding where one side seeks to prove—and the other to disprove—that a given group of languages are related. For our task is to choose the best available classification to explain the mosaic of the world's languages, and this is not accomplished by leaving as many languages or (low-level) families unclassified as possible. Indeed, remote relations and monogenesis are the weakest theory and hence a kind of default. To see this, imagine that God himself came to this conference and assured us that all the languages are related. We would know no more than we already do, and the real task of writing the subsequent history would remain.

On the other hand, imagine that all the world's languages fall into two completely unrelated families. That would, if correct, be a revolutionary thesis, and the larger the number, the greater the upheaval would be. Plus, if all the languages were *not* related, it is not clear that we would call them all languages. For there is no reason to suppose that languages derived independently

would be anything like each other. A language is a language because it comes from a long line of languages.

Moreover, the case for monogenesis is straightforward. To me the basic argument is a mechanistic one. One, we know of no way for a human society to function without language. Two, we know of no way that a language can be created from scratch. Yet in the absence of monogenesis one or both of these things would have to have happened. The same line of reasoning leads further still, if we push the view that species and languages are abstractions, while in the real world there just big primates walking around behaving, for then the form of behavior we call language could not have started overnight. The great panda only eats bamboo shoots, so we assume it had an ancestor that ate bamboo along with other things. If language is indispensable to human survival, we must have had an ancestor who used language but did not depend on it. Moreover, in the case of language, unlike in that of the panda's diet, it was not enough for the right mutations to occur. We inherit just the ability to learn language—and the dependence on it, not the words and constructions of a particular language. So where did the first words and constructions come from? They must have started taking shape long before the genotype was all in place. This may mean that our vaunted uniqueness as a species is not due to anything we are but to something we did, by driving our non-sapiens relatives to extinction. Man's linguistic faculty may well be highly contingent, and the universals of language may be contingent facts, shaped in some cases not by our own biology, but by earlier genotypes and by history. The present is explained dynamically by the past.

Now, the reconstruction of the forms of a particular language is possible only if a sufficiently ramified set of its descendants have survived. Since we seem to have no non-sapiens relatives, we will never know much about the earliest forms of speech, though if we pinpoint the connections between language and anatomy and neurology, we might find out about the origin of, say, subject and predicate, the use of grammatical devices like reduplication, the basic sound system, etc. By the same token, enough peoples and languages of our own kind have disappeared to make it unlikely that we can ever reconstruct a really early form of sapiens language. Furthermore, if prehistoric people did not migrate just the right distances, we would not get the splits that linguistic classification thrives on. If early man stayed in one place for even just the first couple of thousand years of his existence, the language spoken at the beginning of that time would be a closed book to comparativists. Much as we are all descended from a single woman who lived a mere hundred thousand years ago, the known language families may belong to what was originally a single branch of in the tree. It is entirely possible that, proceeding beyond the protolanguages that are being reconstructed today, we will be able to reconstruct an ultimate protolanguage of roughly that vintage, but we have not done so to date, since the proposed global etymologies are debatable and in any case do not add up to a complete protolanguage. For now the idea that there may have been a language spoken at that time, from which all the surviving languages on this planet are derived, must be derived from non-linguistic evidence. We again see that a true picture of linguistic prehistory cannot be had by linguistic means alone. At the same time, we do not even know whether this latter-day Eve mated with just one man or more, and we certainly have reason to believe that there were enough other people on the planet to make it virtually certain that other languages were spoken at the same time, but have since died out. However, we must be cautious: just because we are all Eve's children, it does not follow that we are not also descended from other females of the same time as well. It may simply be that Eve's offspring were phenomenally successful in that, over some period of time, they managed to interbreed with all other populations. In that case, it might well be that Eve's language is *not* the ancestor of all the languages now spoken. We still need linguistics to complete the picture.

Perhaps the strongest tools proposed for linguistic classification are Dolgopolsky's idea that some classes of sounds are stable and that certain meanings are expressed by stable forms, and Greenberg's related proposal, which focuses on a large number of comparisons more than on the stability of any particular ones. But we must understand the mechanisms that insure

stability. Hypothetically, the taboos which lead to instability may have been different a hundred thousand years ago than ninety-five thousand years later. Actually, Dolgopolsky has suggested that certain cases of instability (e.g., that of second person pronouns) are typical of recent cultures, and do not affect our work on prehistory. But might Semitic (and related languages) have lost some of the basic Nostratic words precisely because of the relatively high culture of their speakers? This needs to be explored, as do varying rates linguistic change and sundry such issues.

One kind of stability that we like to see is regular correspondences. But what we need to consider is the mechanisms of sound change, and we have already seen that there are no plausible mechanisms to insure absolute regularity. The exceptions are lawful, but not fully predictable, especially after tens of thousands of years. Thus too-regular correspondences may signal a superficial relationship—or a superficial analysis, and this is one rule of thumb for separating good theories from bad. The Nostratic dictionary contains a pleasing number of such irregularities, and so does all other respectable remote relations work.

It has been argued that the Greenberg and Dolgopolsky methods may yield spurious results, but the same applies to the method of detailed reconstruction, as well. Any two languages can be related by regular correspondences if we allow the equations to be complex enough. All prehistorical linguistics is probabilistic. This again has to do with mechanisms, which we know may produce spurious cognates. The German noun *Braten* 'roast' and the verb *braten* 'to roast' are completely unrelated, as is the *ear* of a living being and an *ear* of corn in English. Such phonetic and semantic correspondences that appear regular but are not cognate may be expected in any language. It is overall systems that we reconstruct, and while most all lexical comparisons will be correct, any one or two could be wrong, and there is no way of knowing which. Indeed, two unrelated languages might share enough *faux amis du comparatiste* to look related. I suspect that languages with few phonemes, with simple (CV) syllables structures and yet with short basic words, like Old Japanese, might fit such a scenario, and I think it will not necessarily be easy to determine whether Japanese is Altaic or Austro-Thai as a result. This is the linguistic uncertainty principle, and it seems the stronger methods are more subject to its rigors than the weaker ones.

In any case, most historical linguistics is based more on instability. It is complex shared innovations, rather than the retention of original features, that impress us the most. Such was Verner's Law, and such are several of the sound laws of Nostratic, notably the one that derives the three series of Indo-European velars from a single series depending on the coloring of the following vowels in Eastern Nostratic. Coincidence is less likely for an unstable than a stable correspondence, since the former would require very precise timing, while stability implies a long period of time that a language has to "keep trying" to develop a coincidental resemblance with another. Further, if our real job is subclassification, then stable elements are of no use, since they provide no evidence for such subgroupings as Nostratic. Finally, the very words which tend to be stable are also prone to be irregular, e.g., the loss of the *z* of *azŭ*, the

1st person singular of Slavic. Sound changes of stable words do not predict the correspondences for unstable words, and we must use the old methods which gave us PIE, Nostratic, etc.

Modern science has turned its back on Aristotle. From astrophysics to zoology, it has become historical, mechanistic, and probabilistic. The science of linguistic prehistory was tailor-made to fit this pattern. The successes of recent work on remote relations give us the confidence, while the outstanding issues it raises impel us, to make the move now. And what of computation? I have been saving the best for last. Both formal and material descriptions can use any metalanguage. But when we look for mechanisms, we need a metalanguage that tells us what a mechanism is, what mechanisms can and cannot do—and that metalanguage is called the theory of computation. At the same time, the existence of computers raises the challenge of artificial intelligence, and above all, natural language understanding. This will not be achieved without a theory of the mechanisms of language. As Stanislaw Lem foresaw years ago, the problem is not to simulate a language but the conditions which shaped it and its speakers. The heirs of Turing and Hermann Paul, of Markov and Illič-Svityč, may just be able to crack this problem. No one else surely will.

Finally, let me turn again closer to home. In the 19th century, as the journals and proceedings amply attest, historical linguists reported their findings to an audience of their peers in just about every science then known. This unity of knowledge in the Western civilization vanished with astonishing rapidity in our own time. As a computer scientist and a linguist, I find myself having to explain how we arrive at constructs like Proto-Indo-European or Proto-Germanic even to colleagues who have never heard of such a thing. But the experience, which I think recaptures some of what the historical linguists of yore did as a matter of course, had led to a conclusion which I would like, if I may, leave with you as a desideratum for all future work in this area. When you show someone all the resemblances among, say, the Germanic languages, they are not necessarily impressed, because they can find more obvious "cognates" between English and French or English and Latin, and yet we tell them English is a Germanic language. What you finally learn is that you have start off by showing that superficial resemblances are usually due to coincidence or recent borrowing, and these must be eliminated when we go looking for ancient connections involving common descent or old borrowings. Furthermore, once we figure out the ancient connections, by establishing language families or macrofamilies and ultimately by reconstructing their protolanguages, that allows us a great number of potential valid resemblances as bogus. The classic example here is the recognition, early on in Indo-European studies, that Latin *deus* and Greek *theós* are not related, but that *deus*, and *Jupiter*, are related to Greek *Zeus*. An apparently obvious relation which had been commented on since antiquity was exploded by the discovery of the comparative method and all that that has entailed. In our time, the work on Nostratic, especially by Dolgopolsky, has served to clarify many resemblances among the various Nostratic subfamilies, and shown many of them to either spurious or, more often, borrowings. What we must clearly realize is that every one of the, for example, Semitic loanwords into Indo-European is a testimonial to the validity of the Nostratic hypothesis, for it is this hypothesis alone which allows us to say with confidence that these words (e.g., **tauros* 'bull') is *not* a cognate. And so my proposal is this: when you tell that thus and such language families are related, go easy on the cognates, show us the masses the masses of superficially similar items that your theory allows to dismiss as false cognates. The same applies mutatis mutandis to ancient borrowings: go easy on the true loanwords, show us the masses of superficially similar items that your theory allows us to say are *not* due to contact between these languages but merely to coincidence.

RECONSTRUCTIONS

ESKALEUTIAN ROOTS

Oleg Mudrak

[O. Mudrak's list of Eskimo-Aleutian roots represents the first attempt to reconstruct this family. In the materials of the 1984 conference, Lingvisticeskaja rekonstrukcija i drevnejsaja istorija vostoka, Mudrak published a comparison of Eskimo-Aleutian and Nostratic, corroborating the Nostratic character of this language. Cf. also: Mudrak, Opyt rekonstukcii fonetiki prajazykov amerikanskix i aziatskix èskimosov, "Paleoaziatskie jazyki," Nauka, Leningrad: 1986, pp. 218-239.

See the table of Eskaleutian phonemes following the word list. - V.S.]

*(-)ʔu- 'to be' ()

*ʔ(ä)pju 'dirt,pus,smoke' ()

*ʔ(e)lu- 'cousin' ()

*ʔ(e)ɲ'e- 'to hang out to dry' (89)

*ʔ(ü)t'u- 'old' ()

*ʔ(ɻ)λe- 'to appear,to become' (177)

*ʔ(ɻ)ɣu-ʔwʌ- 'to wash' (124)

*ʔ(ɻ)tre-ɣ 'smoke,soot' (61)

*ʔ(ɻ)ɣal- 'doorway,window' (267)

*ʔ(ɻ)ɣera- 'mew gull' (237)

*ʔ(ɻ)ɣu-δ'- 'to put throw,to shoot' (120)

*ʔ(ɻ)nə 'house,interior' (90)

*ʔ(ɻ)qərə 'small fry' ()

*ʔ(ɻ)rə 'eye' (51)

*ʔ(ɻ)t'ɻ- 'urine' ()

*ʔ(ɻ)ɜumə-,ʔ(ɻ)ɜəmɻ- 'to count,to miss someone < * to think' ()

*ʔäλ'ɣä 'hand' ()

*ʔäɣɻru- 'rotten' ()

*ʔätɻ- 'to fall down' ()

*ʔəʔqə 'thigh' ()

*ʔəλɣə- 'to change,to become' ()

ʔaλe-(ŋwʌ) 'foot,flipper' ()

ʔaŋʌ- 'to be divided' ()

ʔaŋu- 'big' (180)

ʔaŋura- 'enemy' (300)

ʔaɮ(ɻ)na- 'woman' ()

ʔaɮλu-,ɣaɮλu- 'killer whale' ()

ʔaɮə- 'sun,day' (170)

ʔaɮəvə- 'whale' ()

ʔaδ̃ə- 'name' (34)

ʔaδa 'father' (40)

ʔaδa- 'to drag,to trail' ()

ʔaɣ(ɻ)- 'to pass,to go' (116)

ʔaɣa- 'go away' (114)

ʔaɣaq-ra- 'spear,hook' ()

ʔaɣe-δ̃- 'to open' (115)

ʔaɣlʌ- 'to bring,to move,to work' ()

ʔaɣlu- 'jawbone' ()

ʔaj(ü)qɻ- 'unable' (193)

ʔaj(ɻ)və-,ɣaj(ɻ)və- 'walrus' ()

ʔajʔwʌ- 'buttocks,hips' ()

ʔaja-ɮu- 'cane,walking stick' (280)

ʔaje,ʔaɣe 'brother,sister' (287)

ʔajpa- 'another,second' ()

ʔajwɻ-,ʔajʔwɻ- 'to wound,to kill' ()

ʔakɻɻ-ɣ 'harpoon' (261)

ʔakʌl- 'to shout,to quarrel' ()

ʁ?alʔä- 'to write,to scratch' ()

ʁ?alɣuʔwʌ- 'to desire' (147)

ʁ?ale-ɣ- 'to haunt' (301)

ʁ?alə-,ɣalə- 'two,second' ()

ʁ?amʌKu- 'octopus' (251)

ʁ?ame- 'skin,dress' (279)

ʁ?amə 'and,many' ()

ʁ?amɻƛ(ɻ) 'shin,knee' ()

ʁ?amə- 'thin,near' ()

ʁ?an(ɻ)-ɮ 'breath' ()

ʁ?ana 'mother' (289)

ʁ?anɻ- 'spark,fire' ()

ʁ?apəɓ'(ɻ)- 'to ask' (9)

ʁ?aq(ɻ)rɻK 'ptarmigan' (232)

ʁ?aq(ɻ)vɻ- 'angry,mad' (171)

ʁ?aqwe- 'to run' ()

ʁ?aqəja- 'belly,hips' (213)

ʁ?aqəvrə- 'cloudberry' (254)

ʁ?arɣu-ɮ 'north' (144)

ʁ?aru- 'to be long' (59)

ʁ?aruɮ(ɻ)- 'to skim,to crawl' (58)

ʁ?arvɻ 'blood' ()

ʁ?arə-ɣ- 'to roast on a spit' (268)

ʁ?ata- 'one' (30)

ʁ?ave- 'salmon' (242)

ʁ?awə- 'over there,far off' (15)

ʁ?awu- 'to bring away,to work' ()

*ʔeŋa- 'over there' (133)

*ʔeŋə- 'mountain,peak,cliff' ()

*ʔeɓa- 'to fear' (199)

*ʔeɓa-na- 'danger' (199)

*ʔetʎ'ɻ-mku- 'cold' (153)

*ʔeka- 'right over there' (1)

*ʔela- 'part of' (3)

*ʔela-ɓ 'patch' (186)

*ʔelwa- 'in it,at it' (187)

*ʔemɻw- 'circle;to roll up' (13)

*ʔen'eɣ(ɻ)rə- 'to drill into' (86)

*ʔen'eru- 'to sniff,to snuffle' (87)

*ʔen'u- 'to take out,to pull out' (85)

*ʔenvɻ,ʔunvɻ 'groin,armpit' ()

*ʔenə- 'to end' (88)

*ʔeqɻrə 'corner' (195)

*ʔerə-ɓ- 'to hide' (53)

*ʔetuʔwʌ- 'kind of spear' (264)

*ʔewa- 'sinew' ()

*ʔeɜa- 'wing,arm' (157)

*ʔeɜa- 'to break,to chap,to fall apart' (47)

*ʔeɜu- 'moisture' (68)

*ʔr'eɣtɻ 'den,lair' ()

*ʔüŋ(ɻ) 'beard' ()

*ʔüŋva- 'moss' ()

*ʔuʎə-ð'- 'to turn inside out' (181)

*ʔuŋlü- 'nest,hut' ()

*ʔuŋɨ-δ'-,ʔɨŋɨ- 'to sit down' (139)

*ʔuɣəlu- 'bow,spear,arrow' (140)

*ʔuδ'ə- 'to shed hair(of animal,skin)' (37)

*ʔuɣʎ'u- 'puffin' (228)

*ʔujʌ- 'neck' (162)

*ʔuje,ʔuwe 'husband' (4)

*ʔuk(e)-δ'- 'to make a hole' (109)

*ʔukwɨ- 'to see,to dream about' ()

*ʔulü-ɣ- 'to rub,to soften a skin' (96)

*ʔulu?ə- 'cheek' (99)

*ʔulvɨ 'tongue' ()

*ʔure-ɣ-δ'ɨ- 'to divide' (56)

*ʔɨʔlu 'dug-out,house' ()

*ʔɨδɨ-ɣ,ʔɨtɨ-ɣ 'anus' (31)

*ʔɨɣ(ɨ)- 'go away' ()

*ʔɨɣɨ- 'rendered(fat);to melt' (119)

*ʔɨk(ɨ)nə- 'fire' ()

*ʔɨlɨɣ- 'smell,stench' (163)

*ʔɨm(ɨ)lɨ- 'hair of head' (174)

*ʔəkə- 'strait' ()

*ʔəqə- 'straight' (158)

*λaɣ- 'goose' (233)

*λɨ- 'you,he,they' ()

*ŋaɣu- 'son-in-law' (125)

*ŋəλe- 'cool' (83)

*c(ɨ)rak- 'to have diarrhea' (54)

*cäke- 'parent-in-law' (160)

ɣcaje-,caɣe- 'halibut' (244)

ɣcapɨ-,cäpɨ- 'to block,to plug' (23)

ɣcawəja- 'drum' (290)

ɣceʎ'ɨw 'fishroe' ()

ɣceδu- 'to slide,to go down' (41)

ɣceɣ(ɨ)l- 'to take ones clothes off' ()

ɣceqʌ- 'wet' (111)

ɣceqrə 'young of the seagull' ()

ɣceqɨʔw-δ'- 'to break' (112)

ɣcer(ɨ)ɣɨ 'knee' (201)

ɣcevü- 'to wring' (25)

ɣcu- 1,caʔwə- 2 '1 thing, 2 to do' ()

ɣcuqɨ- 'root (edible)' (24)

ɣcəʁa- 'good luck charm' (299)

ɣcəɣ(ɨ)- 'to split' (173)

ɣcəɣu- 'sand' (161)

ɣδ'ɨw- 'to take' (178)

ɣδaʁtu- 'kidney' (29)

ɣδajə- 'dark' ()

ɣɣäʁra- 'mould,dust,ashes' ()

ɣɣaŋə- 'yes' (136)

ɣɣaja-qu- 'head of spear' (263)

ɣɣalajwa- 'board' (275)

ɣɣalew- 'devil' ()

ɣɣam(ü) 'darkness,night,cloud' ()

ɣɣamɨ- 'better' ()

ɣɣanaw- 'stick,drum' (91)

*ɣela-ɣ 'patch;to connect' ()

*ɣɨk(ɨ)- 'to burn (tr.)' (108)

*k(ɨ)-ɣa- 'to be slow' (106)

*k(ɨ)-ɣat'ɨ 'back,torso' ()

*k(ɨ)lu- 'to go in' (176)

*kaʔna-ɣ- 'to fall headlong,to step into' ()

*kaʔtu- 'wide,big' (151)

*kaλu- 'sound' (102)

*kaŋa- 'top,upper part' (128)

*kaδa- 'to overtake,to meet' ()

*kajwa- 'muscle' (63)

*kamə-ɣ 'footwear' ()

*karu 'small fry' ()

*keŋ(ü)- 'behind,time after' (130)

*keδ'(ɨ)- 'to sink,to go down' (32)

*keδŋa- 'moss' (255)

*keɣɨ- 'saliva,sweat' ()

*ken 'who' ()

*kev(ɨ)- 'to sink' (11)

*kew- 'stone' ()

*kuja-ɣ 'spine,loin' (64)

*kukme- 'chunk,lump' (150)

*kurɨ- 'leg,hips' (214)

*kuvʌ-,kəvʌ- 'to rise,to lift' (169)

*kuvra- 'fishnet' (266)

*kɨ-ɣ(ɨ)- 'to bite' (164)

*kɨ-ɣ-uδ'ɨ 'tooth' (197)

**kɻktu-* 'mosquito,louse' ()

**kɻm(ɻ)-* 'belly;ft,stout' ()

**kɻt(ɻ)ʔʌ* 'foot,heel' (218)

**kəmɻ-* 'turf,grass' ()

**kəvɣa-* 'feast' (143)

**mam(ɻ)-* 'to heal' (7)

**mɻlʔu* 'beetle,butterfly' ()

**məqʎu* 'nipple' ()

**n'aja-* 'younger sister' ()

**n'eʁ(ü)* 'leg' ()

**n(ɻ)lə-* 'to break wind,to fart' (84)

**n(ɻ)mə-* 'fishline' (80)

**n(ɻ)pətə-* 'to put into the bosom' (81)

**n(ɻ)qə-* 'meat,fish' (82)

**na-* 'no' (78)

**naɣɜɻ-* 'woman,girl' ()

**nan'e-* 'light,lamp' (75)

**nanu-* 'white bear' ()

**nuna-,nəna-* 'land,earth,country' (76)

**nəɣə-* 'frontside(NE,E,S)' ()

**pän'ɻ,pan'ɻ* 'daughter,sister' ()

**paʔə-* 'to paddle' (258)

**paθ'ɻw-* 'to throw with the palm' ()

**paɣa-* 'along,up here' (113)

**paja-* 'weak' (204)

**pan(ɻ)-* 'to ooze out;wave' ()

**paqə-θ'-* 'to find' (5)

*patɨ- 'lips,to soak up' ()

*pawa- 'back there' (16)

*pawn(ɨ)r'- 'kind of berry,shiksha' ()

*pe- 'to say,to do' (190)

*peλa- 'boredom,reading' ()

*peŋa- 'back there' (134)

*peŋa- 'three,many' ()

*peŋu- 'to push' (131)

*peƙəδu- 'blizzard' ()

*peƙəra- 'to plait;thread' ()

*peɣ(ɨ)- 'to tear off,to dig' ()

*pel(ä)ɣɨ- 'to dig out,to cut into' (197)

*pen'e- 'fine,good' ()

*peru- 'to bring,to go' ()

*puɣ(ɨ)ra-,puw(ɨ)ra- 'to boil' ()

*puɣɨ-ƙ 'bag,case' (118)

*puju- 'smoke,steam' (6)

*puku-ɣ- 'to peck' ()

*pura- 'to dry (fish or meat)' (60)

*put(ɨ)- 'to tip over,to capsize' (33)

*putə-,putu- 'thumb' (217)

*puv(ä)ɣɨ- 'lung' (194)

*puv(ɨ)- 'to blow' ()

*puv(ɨ)- 'to swell' (12)

*puwalu- 'gloves,mittens' (281)

*puʒɨ- 'to lie on the hollow side' (46)

*pɨλ(ɨ)ɣa- 'loins,seat' ()

*pɨkɨ-ð'- 'to move,to go away' (165)

*pɨta?ʌ 'joint,tail' ()

*pəŋa- 'loud,noise' ()

*pəʁu- 'to bury' (123)

*pəcta 'ghost' ()

*pəð'a?u 'pot,kettle' ()

*pəɣla- 'to have nightmare' (146)

*q(ä)raw-,q(ä)rə?wʌ 'hoar-frost,ice' ()

*q(ɨ)la- 'spirit' (298)

*q(ɨ)rena- 'slippery' (55)

*q(ɨ)tɨk- 'middle finger' (211)

*qäjä- 'palm of the hand' ()

*qa- 'interrogative pronoun' ()

*qaλ(ä)- 'to boil' (103)

*qaʁ(ɨ)t'ɨ- 'darkness,daybreak' ()

*qaʁa- 'to dance' (292)

*qað'(ɨ)- 'to be loud,noisy' (35)

*qaɣə- 'to crack' (117)

*qalmu- 'eyebrows' (202)

*qam(ɨ)- 'deep,inside' ()

*qamu- 'to drag' (191)

*qan'e- 'snow' (185)

*qapɨ- 'mussel' (249)

*qət'ɨ- 'breast,ribs' ()

*qavɣa- 'bird' (156)

*qe?lʌ- 'to weave' ()

*qe?lu-ɣ- 'to bark' (97)

**qeʎ'ə-* 'to tie' (104)

**qeʎu-* 'knot,rope' ()

**qela-* 'sky,morning' ()

**qelu-* 'intestines,navel' ()

**qen'a-* 'cold' (135)

**qepɻ-* 'to twist' (10)

**qera-* 'to cry,to weep' (52)

**qerə-* 'grey hair' (210)

**quʎ'a-* 'above' (105)

**quδɣa-* 'crane' (238)

**quɣr'ɻ-* 'to choop (wood)' (272)

**quj(ɻ)-* 'saliva,treacle' ()

**qujɣɻ-* 'to cough' (65)

**quk-* 'swan' (230)

**qumtu-,quŋtu-* 'collar bone' ()

**qupəʔu* 'white' ()

**qurvʌ-* 'to love' (200)

**qurwɻ(və)* 'shinbone,tibia' (215)

**qurɻ-* 'narrow' (57)

**qut'ɻ-* 'middle,space between' (43)

**quvəl-* 'white' (154)

**quw(aɣ)ru-* 'edge,ridge' (152)

**quwul-,quʔul-* 'sour' ()

**qɻjə-* 'baidarka' (94)

**qəʎə-* 'bottom;coastal ice' ()

**qəŋə-* 'nose' ()

**qəŋəʎə* 'kind of bird' ()

#qəme- 'top,top of the head' ()

#t'(ä)məlu- 'chin' (20)

#t'(ä)q- 'to end;full' ()

#t'(ɨ)ŋə- 'fur,hair' (132)

#t'(ɨ)ɣəlɨ- 'to steal' (22)

#t'aˀjə- 'wrist,hand' (219)

#t'anɨ- 'to take the blubber off' (273)

#t'awc(ɨ) 'belt' ()

#t'ümɨ 'path,trail' ()

#t'uKə-,t'əKə- 'to point' (211)

#t'uŋɨ- 'nest,bed' (129)

#t'ujɨ- 'shoulder,arm' (66)

#t'ula- 'to arrive' (156)

#t'um(ɨ)na 'pine' ()

#t'unˀe-ɣ 'backbone' (212)

#t'unu- 'back of head,neck' (21)

#t'unɨ- 'spear' ()

#t'upe- 'to tattoo' (277)

#t'uqə- 'throat' (203)

#t'uwɨ 'sand,old ice' ()

#t'ɨpʎ'e- 'particles of food around the mouth' (149)

#t'əɣə- 'young of animal,child' (221)

#t(ɨ)ɣə- 'hard,stiff,tough' (19)

#taʎe- 'arm,branch' (101)

#taɣən- 'cow parsnip' (253)

#taɣə- 'to come' (159)

#taju- 'to run' ()

ʁəɣ(ɻ)- 'difficult,hard' ()

ʁəɻu- 'to pull' (26)

ʁəke 'rib,breastbone' (184)

ʁəle- 'to scrape the hair off' (274)

ʁəluʔwʌ- 'dry weather' (95)

ʁərə- 'front,outside' (142)

ʁəve- 'iron,knife' (271)

ʁəwlɻ 'season,year' ()

ʁəðˀə-ɣ 'stiff,hard' (36)

ʁəɣ(ɻ)ðˀə- 'to smash,to break' (189)

ʁəp(ɻ)lʌ- 'guillemot' (227)

ʁətˀaʔwʌ 'four' (44)

ʁəv(ɻ)- 'front,breast' ()

ʁəklu- 'hair ornaments' (285)

ʁəlu-ɣ 'sound of winde,echo,noise' (27)

ʁəkə- 'stiff' (157)

ʔ	ƛ	ƛˀ	ɬ	ɬˀ	ŋ	ɣ
a	ä	c	ð	ðˀ	ɣ	e
j	k	l	m	n	nˀ	p
q	r	rˀ	t	tˀ	u	ü
v	w	ə	ɻ	ʒ		

V. M. ILLIČ-SVITYČ'S EARLY RECONSTRUCTIONS OF NOSTRATIC

Translated and re-arranged alphabetically by Mark Kaiser

Before publication of his Nostratic Dictionary, Illič-Svityč published a number of articles on his research on the reconstruction of the Nostratic macrofamily. The first article dealing with Nostratic was "Materialy k sravnitel'nomu slovarju nostratičeskix jazykov." [Material for a Comparative Dictionary of Nostratic Languages]. Ètimologia 1965 (1967). Moscow, Nauka. pp. 321-373. The article provided lists of phonetic correspondences and 607 reconstructed roots together with the reconstructions from the individual families on which they were based (see below). The roots were presented in alphabetic order according to the Russian translation of the reconstructed semantics. In addition bibliographical data was furnished (which has not been translated here).

The Dictionary is a more complete work. Although there are more roots in the "Materialy" (the Dictionary has 378 published to date), the reconstructed form for each language family is supplemented by the words from individual languages and apparent incongruities are explained (isolated examples of Dictionary entries have been translated in Kaiser-Shevoroshkin 1987:36-7 and 1989). It is also clear that in the Dictionary a more cautious approach to reconstruction was maintained. Of the 36 words in b- found in "Materialy," 26 were included in the Dictionary (and 6 new roots were added). Nine of the 10 excluded items were binary comparisons, suggesting that in at least a few cases the question of their

genetic relationship will be resolved with further research.

"Materialy" provides data on 256 roots in P-, Q-, R-, S-, T-, w-, and Z-, and only 26 of these are found in the Dictionary (14 in volume II, 12 in volume III). In his forword to volume 2 (1976), V. A. Dybo remarked that these were "experimental entries written by the author before he began writing the corpus of the dictionary." Nevertheless, judging by the data of volume I (b-ƛ), we can assume that a significant percent of the P-Z data eventually will be accepted. In fact, Dybo notes that the mass of etymological research done over the 18 years from the time of Illič-Svityč's death to the publication of volume III "in the majority of cases only helped to strengthen the etymological proposals of the Nostratic Dictionary's author."

This is not to suggest that these data are to be accepted as is or that the Dictionary's data is identical to that found here. The data from "Materialy" underwent a number of modifications before being included in the dictionary. One phoneme (ñ-) reconstructed in "Materialy" was excluded from the Dictionary, while the glottal stop (ʔ) was added. In many instances data from a language family not represented in "Materialy" were added, in some cases data from a family were rejected. Often the reconstruction was modified slightly as more data became available. In the Dictionary Illič-Svityč rejected the notion of Nostratic roots with a vowel in anlaut, preferring to reconstruct initial laryngeals which were later lost in all the East Nostratic languages (Alt., Ural., Drav.), and whose fate in West Nostratic (IE, AA, Kart.) depended on language family and type of laryngeal. Subsequent developments in research on Nostratic has shown that Illič-

Svityč's **ḥ in fact covers two phonemes, ḥ and x, and his γ covers ʕ and γ (for details, see Kaiser-Shevoroshkin 1985 and 1988). The reflexes of some phonems differ: for example, **ṡ- gives Uralic *s in "Materialy," but Uralic *ś in the Dictionary, and the reverse is true for **ś. Perhaps the most significant difference is the addition to the Dictionary of over 35 suffixes and pronouns.

Thus, "Materialy" is regarded by Nostratists as an important work in the history of Nostratic studies, one with a wealth of raw data but which need be treated with some care. One would certainly want to consult the subsequent revisions of Nostratic by Illič-Svityč and later by the members of the Illič-Svityč seminar under the guidance of Dybo and to cross reference them with the research of Aharon Dolgopolsky, which Illič-Svityč used in both this article and in the dictionary.

SYMBOLS and ABBREVIATIONS

´	=	A palatal consonant.
̣	=	A glottalic consonant, except Drav. retroflex consonants.
Ȧ	=	a or ä
C	=	c or ç
Ć	=	ć, ḉ, or ʒ́
Č	=	č or č̣
E	=	ä, e, or i
9	=	voiced post-velar stop
ḥ	=	Voiceless pharyngeal.
H	=	undetermined laryngeal or post-velar
ʔ	=	Glottal stop.
ʕ	=	Voiced pharyngeal.
I	=	e or i
kᶜ	=	Altaic aspirated k.
K	=	g, k, ḳ, or q̣
Ḳ	=	ḳ or q̣
L	=	l or ɬ in initial position, l, ɬ, or l´ in medial position.
N	=	n, ń, or ñ
O	=	o or u
P	=	p or p̣
R	=	r or r´
S	=	s, ś, or š, or z
T	=	t or ṭ
U	=	o, u, or ü

ʌ = vowel of indeterminable quality

Slanted brackets / / around phoneme(s) indicate that those phoneme(s) are the best, but not the only possible reconstruction.

Round brackets ( ) indicate optional phoneme(s).

The data in square brackets [ ] indicate the number, form, and meaning of the reconstruction as it appears in the Nostratic Dictionary (1971-), if included. The page number on which the item occurred in the 1967 article is provided for all forms (Mat. xxx).

Braces { } have been used to give an approximate reconstruction for items which Illič-Svityč left unreconstructed. If the form appeared in the Dictionary, this later form was used; if not, the tables from the Dictionary were consulted and an approximate reconstruction has been provided.

The tables of phonetic correspondences follow the word list.

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{**baHʌʃ 'tie together': Alt. *bā-; Kart. *b-.
[Cf. #2 **baHʌ 'to tie to, fasten to'] [Mat. 364].

**ba/ķ/ʌ 'look': Alt. *baka- 'look, search'; AA *bķ- 'see, know'.
[Cf. #3 **baķa 'look'] [Mat. 366].

**bal/g/ʌ 'shine': IE *bhelg-; Alt. *balgy-; AA *blg .
[Cf. #5 **balqa 'sparkle'] [Mat. 331].

**balqa 'sparkle': IE *bherH´-ḱ-/*bhreH´-ḱ- 'blaze, glow, glimmer'; Kart. *berçq-/*brçq- 'sparkle'.
[Cf. #5 **balqa 'sparkle'] [Mat. 362].

**balʌ 'be sick': IE *bhol- 'be sick'; Alt. *bal´(ʌ) 'wound'.
[Cf. #1 ?**baHli 'wound, pain'] [Mat. 331].

**bandʌ 'tie together': IE *bhendh-; AA *bnd.
[Cf. #30 **bʌnţʌ 'tie together'] [Mat. 364].

{**baNʌ} 'wash': ?Drav. *maṇṇ-; Kart. *ban-; AA *bn.
[Mat. 349].

**barʌ 'take': IE *bher- 'take, carry'; Alt. *bary- 'take'.
[Cf. #8 **bari 'take'] [Mat. 332].

**ba/ś/ʌ 'pulvarize': IE *bhes-; Ural. *paśʌ-.
[Mat. 358].

**b/ä/lʌ 'light (not dark)': IE *bhel- 'white, light'; ?Alt. *b/ä/li- 'pale, light'; AA *bl- 'light, to shine'.
[Mat. 363].

**bäńgʌ 'head': Alt. bäńä 'head, brain'; Ural. *päńä.
[Mat. 337].

{**berg/i/} 'high, tall': Ural. *p/i/rʌ- 'high, tall'; Drav. *pēr 'steep'.
[Cf. #9 **berg/i/ 'high, tall'] [Mat. 335].

**berʌ 'give': Alt. *beri-; Kart. *bar-.
[Cf. #10 ?**be/rH/u 'to give'] [Mat. 338].

**biçʌ 'pound, crush': IE *peis- (prob. < *bheis-) 'pound, crush, crumble'; Drav. *pīc-/*picʌ- 'pound, crush, mash'; Kart. *biç- 'crumble'; ?AA *bdʕ 'crumble, break'.
[Cf. #12 biçʌ 'break'] [Mat. 369].

**bilɣʌ 'throat': Alt. *bylga 'throat'; AA *blʕ 'throat, swallow'.
[Cf. #4 **balʕ/u/ 'swallow'] [Mat. 336].

**bil(w)ʌ 'cloud': ?IE *bhol- 'steam, hot weather'; Alt. *bylʌ-/*bulʌ- 'cloud'; Ural. *pilwe 'cloud'; ?Kart. *pula 'cloud, steam'; AA *b(j)l 'cloud'.
[Cf. #13 **bilwi 'cloud'] [Mat. 351].

**bilʌ (descriptive) 'shout': IE *bhel- 'speak, roar'; Drav. *pil̤ʌ- 'shout'; Kart. *bir- 'sing'.
[Cf. #14 **bil´ʌ (descriptive) 'shout'] [Mat. 345].

**birʌ 'flow': Alt. *byra 'river'; Drav. *pīr- 'flow, ooze'.
[Mat. 369].

**biš̆ʌ 'bile, gall': IE *bis-(t)lʌ; Ural. *pyš̆a 'bile, gall, yellow, green'.
[Mat. 340].

**b/o/kʌ 'run': IE *bheg^{H}-; Ural. *pakʌ-.
[Cf. #15 **bok/a/ 'run away'] [Mat. 330].

**bolʌ 'leaf': IE *bhel- 'leaf, to bloom'; Drav. *polʌ- 'bloom, ripen'; ?Kart. *bal- 'leaf'; AA *?bl 'leaf, grass'.
[Cf. #16 **bol?i 'grow (re: plants)'] [Mat. 347].

**bonk̤ʌ (descriptive) 'swell': IE *bhenǵh- (prob. < *bhenḱ-) 'lump, bump, fat'; Alt. *boŋʌ 'fat, thick; chief, main'; Ural. *poŋkʌ/*puŋkʌ 'swelling, lump'; Drav. *poṅk- 'swell, boil away'.
[Cf. #17 **bongä 'fat, swell'] [Mat. 333].

**borjʌ 'brown': IE *bher-; Alt. *bor´a.
[Cf. #18 **bor´a 'brown, gray-brown'] [Mat. 332].

**b/o/rwʌ 'log': IE *bhreuH- 'log'; Ural. *porwa/*parwe 'support, board, flat-bottom ferry'.
[Mat. 332].

**borʌ- (descriptive) 'boil, seethe': IE *bheru̯-/*bhreu-; Ural. *pora- 'id'; Drav. *puṛʌ-.
[Cf. #24 **bur´a 'boil, seethe'] [Mat. 344].

**bu/H̯ʌ 'be': IE *bheuH-; Alt. *büi-.
[Mat. 333].

**bu/k̤/ʌ 'bend': IE *bheug(h)- (prob. < *bheuk-) 'bend'; Alt. *bökä-/*bükä- 'bend, hump'.
[Cf. #25 **bük̤a 'bend, bent'] [Mat. 336].

**bulʌ 'mix': Alt. *büli; AA *bl(l).
[Cf. #20 **bulʌ 'moist sediment, residue'] [Mat. 366].

**bur(9)ʌ 'storm': IE *bhe(u)r- 'rage, storm'; Alt. *bur(g)a 'blizzard, storm'; Ural. *purkʌ 'blizzard'; Kart. *burɣw- 'snowstorm'); ?AA *br- 'storm, wind'.
[Cf. #23 **burʌ 'snow-(sand-)storm'] [Mat. 332].

**burʌ 'bore, drill': IE *bher- 'bore'; Alt. *burʌ- 'bore, rotate'; Ural. *pura 'drill, auger, to bore'; Drav. *pūṛ-/*puṛʌ- 'bore, hole', *pōṛ 'hole'; AA *b(w)r 'bore, hole'.
[Cf. #21 bura 'bore, drill'] [Mat. 363].

**burʌ 'cover, shield from light': Alt. *bürʌ- 'cover, wrap up, to darken, obscure'; Kart. *bur- 'cover, darken, obscure'; ?AA *b/wr/ 'night'.
[Cf. #26 **büri 'cover'] [Mat. 342].

**burʌ 'dust': Alt. *bura 'dust, sand, ash'; ?Ural. *pora 'dust, ash'; Drav. *puṛʌ- 'dust, ash'; Kart. *b/u/rɣw- 'dust'; ?AA *bwr 'dust, sand'.
[Cf. #22 **bur(H)ʌ/*bor(H)ʌ 'porous dirt, dust'] [Mat. 358].

**bʌ9ʌ 'much, many': Kart. *beɣ- 'sufficient'; AA *bg- 'abundance, surplus'.
[Cf. #28 **bʌ9ʌ 'sufficient, excessive'] [Mat. 348].

**bʌl/H/ʌ 'blow': IE *bhelH′-/*bhleH′- 'blow, swell'; ?Alt. *bylka- 'to swell, to overflow'; Kart. *bĕr-/*bēl- 'blow, swell'.
[Cf. #29 **bʌl′ʌ 'to blow, inflate'] [Mat. 340].

**bʌrdʌ 'to ford, to wade': IE *bhre/dh/- 'ford, wade, wander'; Kart. *bo(r)d- 'wander, be in delirium'.
[Mat. 332].

**bʌrʌ 'give birth to': IE *bher- 'give birth, baby'; ?Kart. *ber- 'baby'; AA *br- 'give birth to'.
[Cf. #32 **bʌrʌ 'baby, child'] [Mat. 361].

**calʌ 'split, splinter': IE *skel- 'split, splinter, (cutting) edge'; Alt. *čaly '(cutting) edge, point'; Ural. *śale- 'split off'; Drav. *cal- 'split, splinter'; Kart. *cel- 'mow'; AA *sl- 'split, splinter, point, (cutting) edge'.
[Cf. #33 **calu 'split, splinter, cut'] [Mat. 360].

**/c/arʌ 'rough': IE *skor- 'ice crust, bark'; Alt. *čarʌ- '(ice) crust, rind, scab'; Drav. *carʌ- 'rough'; ?Kart. *cera 'barren land'.
[Cf. #47 **ćarʌ 'hardened crust, scab'] [Mat. 372].

**/c/olmʌ 'loop, noose': Alt. *čalma 'loop, lasso'; Ural. *śolme 'loop, knot'.
[Mat. 354].

**/c/uj(H)ʌ 'thorn': IE *sk(h)u̯oi-/*sk(h)ui- 'thorn, pine needle'; Alt. *čüjä 'pine needle, thorn, nail'; ?Kart. *cxwʌ- 'awn of spike'. [Cf. #34 **cujḫa 'plant thorn'] [Mat. 372].

**c/u/rʌ (descriptive) 'drip': Alt. *čurga- 'drip'; Drav. *cōr/*corʌ- 'drip, to ooze'.
[Cf. #35 **curʌ/*corʌ 'drip'] [Mat. 343].

**cʌtʌ 'cover (w/clothes)': IE *sḱed-; AA *str.
[Cf. #36 **cʌtʌ 'cover, conceal'] [Mat. 357].

**çarʌ 'cut': IE *sker- 'cut'; Alt. *čary- 'cut, tear'; Drav. *car- 'cut, tear'; AA *ṣ(j)r 'cut, split, splinter'.
[Mat. 360].

**ç/ä/jʌ 'glitter, sparkle': IE *sḱei- 'sparkle, shadow, pale light'; Alt. *č/ä/ji- 'appear pale, transparent'; AA *ṣjḥ 'glimmer, dawn, shine'.
[Cf. #37 **çäjḥa 'glitter, sparkle'] [Mat. 348].

**çurʌ 'herd': ?Alt. *sürʌ- 'drive (herd)'; Ural. *śurʌ 'herd of (wild) deer'; ?AA *ṣwr 'herd of wild bulls, cows'.
[Cf. #40 Curʌ 'herd (of wild animals)'] [Mat. 367].

**çʌmʌ 'astringent': IE *skem- 'bitter taste'; AA *ṣm- 'astringent, bitter'.
[Cf. #54 ?**čämʌ 'astringent'] [Mat. 368].

**çʌmʌ 'maim, cripple': IE *sḱem- 'mutilation'; Kart. *çam-/*çem- 'torment' AA *ṣmj 'perish'.
[Mat. 370].

**çʌrʌ 'across': IE *sker(t)- 'across, through'; Kart. *çar- 'across'.
[Mat. 372].

**çʌwʌ 'speak, talk': Kart. *çw- 'say'; AA *ṣw- 'call, shout'.
[Cf. #38 ?**çʌwʌ 'shout, speak, talk'] [Mat. 337].

**/ć/apʌ (descriptive) 'chop': IE *skep- 'chop, beat'; Alt. *čapʌ- 'chop, beat'; Ural. *ćappa- 'chop, beat'; Drav. *cavʌ- 'chop off'; ?AA *sp- 'beat'.
[Cf. #41 **ćapʌ (descriptive) 'chop'] [Mat. 361].

**/ć/elʌ 'jump': sḱel- 'jump'; Alt. *č/e/lä- 'stumble; limp'; Ural. *ćelʌ- 'jump'.
[Cf. #44 **çelʌ 'jump'] [Mat. 358].

**/ć/ipʌ (descriptive) 'drip': Alt. *čy/p/-; Ural. *ćyppa.
[Mat. 343].

**ćitʌ 'split, splinter': IE *skeid- 'split, splinter'; Drav. *citʌ- 'to damage, break'; ?Kart. *c(1)it- 'chop'; AA *śtr 'split, splinter'.
[Mat. 360].

**ćohrʌ 'light (not dark)': ?Alt. *siāra 'yellow, white, pale'; Ural. *ćōra 'light, white, grey'; AA *śhr 'moon'.
[Mat. 363].

**ćurʌ (descriptive) 'flow' (see **c/u/rʌ 'drip'): Ural. *ć/u/rʌ- 'to flow'; Drav. *curʌ- 'flow'; Kart. *c(1)ur- 'swim, sail, float'.
[Cf. #35 **curʌ/corʌ (descriptive) 'drip'] [Mat. 369].

**ćʌnʌ 'know': Kart. *c(1)an-/*c(1)n-; AA */ś/n, *w/ś/n.
[Cf. #42 **ćinʌ 'know'] [Mat. 343].

**ćʌwʌ 'guard': IE *(s)keu- 'guard, watch'; Kart. *c(1)aw-/*c(1)w- 'take care of, guard'.
[Cf. #43 **ćuHʌ 'look'] [Mat. 367].

**ç̣abʌ 'glue': Alt. *čabʌ-; Drav. *cavʌ 'clay for pottery; lubricate'; Kart. *ç(1)eb- 'glue (with a glue made from plants)'; ?AA *s̬bɡ 'paint, dip'.
[Mat. 344].

**ç̣ʌwʌ 'burn': Kart. *ç(1)w- 'burn'; AA *św- 'fry, to dry'.
[Mat. 341].

**/č/al/H/ʌ 'wide': IE *stelH-/*stleH- 'wide, spread out'; Alt. *čāla 'wide, spread out'.
[Cf. #58 **čalHa 'wide'] [Mat. 373].

**čirʌ 'rot': IE *(s)ter- 'rot'; Alt. *čiri- 'rot, stink'; AA *t̬rʕ 'damp, moist, rotten'.
[Cf. #50 **čiru 'puss,swill'] [Mat. 336].

**/č/ympʌ 'crooked': IE *s/ḱ/amb-; Ural. *ćȳmpa.
[Cf. #49 **ćimpa 'crooked, bent'] [Mat. 345].

**čun/k/ʌ 'smoke': IE *steng- 'disperse in air, scatter, splash'; Ural. *čünʌ 'smoke, fog, odor'; AA *t̬(w)n 'smoke (intr.)'.
[Cf. #51 čüngʌ 'smell, odor'] [Mat. 340].

{**čokʌ} 'big': Alt. *čŏk(ʌ) 'many'; Ural. *čŏkkʌ 'fat, big'.
[Mat. 331].

**č̣iḳʌ (descriptive) 'cut': Alt. *čikʌ- 'cut, chop'; Kart. *č̣eč̣ḳ- 'cut finely'.
[Cf. #55 **č̣iḳʌ (descriptive) 'cut'] [Mat. 361].

**ç̣ʌrʌ 'be concerned about, care for, worry': IE *sterg-/*sterk- 'be concerned about, watch over'; Kart. *č̣ir- 'be concerned about, to need'; AA *t̬r, *nt̬r 'watch over'.
[Cf. #56 **č̣irʌ 'watch over, look after'] [Mat. 342].

**ç̣ʌrʌ 'point, (cutting) edge': Kart. *č̣ar-/*č̣er- 'cut, chop'; AA *t̬r- 'point, (cutting) edge'.
[Cf. #53 **č̣Arʌ 'cut'] [Mat. 353].

{**C/i/ngʌ} 'stick into': IE *ste(n)gh- 'stick into, spike'; Ural. *č/i/ŋkä- 'stick into, to peck'.
[Mat. 335].

{**ćaḳʌ} (descriptive) 'poke, prick': Alt. *čoky- 'peck, hollow'; Drav. *cakk- 'prick, pierce'.
[Cf. #46 **ćaḳʌ 'tickle'] [Mat. 344].

{**Cʌmʌ} 'grass': Kart. *ç(1)am-/*ç(1)em- 'grass'; AA *šm- 'plant'.
[Mat. 369].

**dakʌ 'near': Alt. *daga-/*daka- 'near, follow'; Ural. *taka 'rear'; AA */d/k 'near'.
[Cf. #61 **daḳa 'near'] [Mat. 331].

**dangʌ 'cover': IE *dhengh- 'cover, fertilize'; Ural. *taŋe- 'cover'; AA *dm(n) 'cover, fertilize'.
[Cf. #63 **danga 'cover'] [Mat. 355].

**d/ä/wʌ 'blow': IE *dheu(H)-; Alt. *d/ä/bi-.
[Cf. #64 **dEwHi 'to rock, blow'] [Mat. 340].

**digʌ 'fish': IE *ǵhdū; Alt. */d/yga-; AA *dg.
[Cf. #67 **diga 'fish'] [Mat. 362].

**d/i/ɣʌ 'put, lay': IE *dheH′- 'put'; ?Alt. */d/ī- 'insert'; Kart. *d(w)- 'put, lay'; AA *(w)dʕ 'put, lay'.
[Cf. #75 **dʌʕʌ 'put, lay'] [Mat. 344].

**dilʌ 'sun': Alt. *dyl(a) 'sun, year'; Kart. *dila 'morning'.
[Cf. #68 **dila 'sunlight'] [Mat. 366].

{?**diqʌ} 'earth, dirt': IE *dheǵhom/*ǵhdhōm < dhǵhōm 'earth'; Kart. *diqa/*tiqa 'dirt, clay'; AA *ṭ?/*ṭ/ḥ/ 'earth, clay'.
[Cf. #69 **diqʌ 'earth'] [Mat. 342].

?**dulʌ 'deaf': Alt. */d/ülʌ; Kart. *dura.
[Cf. #74 ?**dUrʌ 'deaf'] [Mat. 336].

**dulʌ 'fire': Alt. *dulʌ- 'warm'; Ural. *tule 'fire'; ?Drav. *tuḻʌ- 'sparkle'; AA *dlḵ 'burn'.
[Cf. #71 **duli 'fire'] [Mat. 352].

**duλʌ 'extremitiy': Ural. *tuδ′ka; Drav. *tutʌ; Kart. *dud-.
[Cf. #72 **duλʌ 'extremitiy, tip, point'] [Mat. 352].

**dungʌ 'be silent': Alt. *d/ü/ŋä- 'be silent, calm'; Kart. *dum- 'be silent'; AA *d(w)m 'calm, be silent, sleep'.
[Cf. #73 **dünga 'be calm, silent'] [Mat. 349].

**durʌ 'deceive': IE *dhuer(H)- 'allure, deceive'; Drav. *tūr- 'to slander, offend'.
[Mat. 352].

**dʌwʌ '(physical) weakness': IE *dheu-, *dhuei- 'die, loose consciousness'; AA *dw- 'be sick, die'.
[Cf. #76 **dʌwʌ 'be sick, die'] [Mat. 365].

{**ga(Hʌ)} 'receive': ?IE */gh/eu- 'receive'; Alt. *ga- 'receive, take'; Kart. *g- 'acquire'.
[Cf. #77 **ga(Hʌ) 'take, receive'] [Mat. 356].

**garʌ 'portrude': IE *gherH-/*ghreH- 'portrude, thorn, branch'; Alt. *gara 'branch'; Ural. *kara 'thorn, branch'; Drav. *karʌ 'sharp, uneven'.
[Cf. #78 **gara 'thorny branch, thorn'] [Mat. 369].

**gändʌ 'male (of species)': Alt. *g/ä/ndü; Drav. *kaṇṭʌ.
[Cf. #79 **gändu 'male (of species)'] [Mat. 362].

**g/ä/rʌ 'dawn': IE *ǵherH´-/*ǵhreH´- 'dawn, shine brightly';
Alt. *g/ä/rä 'dawn, light (adj), bright'.
[Cf. #82 **gE/hr/a 'dawn'] [Mat. 342].

**gedʌ 'rear': IE *ǵhed- 'defecate, anus'; Alt. *gedä 'rear, nape of neck'; ?AA *gd- 'rear'.
[Cf. #81 ?**gedi 'nape of neck'] [Mat. 342].

**gepʌ 'light (not heavy)': Alt. *gö/p/i- 'light, shallow'; Ural. *keppä 'light'.
[Mat. 346].

**gil/H/ʌ 'shine': IE *ǵhel(H)-; Alt. *gil(ä)-; Ural. *kīlʌ- .
[Cf. #84 **gi/ɬ/ḫu 'smooth and shiney'] [Mat. 330].

**gilʌ 'be sick': IE *ǵhol- 'pain, injury'; AA *g(j)l 'sickness'.
[Cf. #83 **gilʌ 'state of sickness, grief'] [Mat. 331].

**gobʌ 'plain (n.)': Alt. *goby 'desert'; AA *gb(b) 'plain, field'.
[Mat. 358].

**gojrʌ 'antelope': IE *ǵhu̯er- 'wild animal'; Alt. *görʌ- 'antelope, wild animal'; Ural. *kojra 'male deer, male'; Drav. *kurʌ- 'antelope'; AA *gʸr- 'antelope'.
[Cf. #93 **gUjRä 'wild animal'] [Mat. 330].

**gojʌ 'dawn': IE *gʸhei- 'glitter, light (adj), bright'; ?Alt. *giaba- 'dawn'; Ural. *koje 'dawn'.
[Cf. #85 **goHjʌ 'daylight, dawn'] [Mat. 342].

?**g/o/jʌ 'moth': Alt. *güjʌ-; Ural. *koja.
[Cf. #167 **koja 'moth, caterpillar'] [Mat. 349].

**golʌ 'roll, slide, flow': Kart. *gor-; AA *gʸl- 'roll, slide; round'.
[Cf. #94 **gUl´ʌ 'round, sphere'] [Mat. 343].

{**goLʌ} 'grief': Drav. *gōɻ; Kart. *glow- 'mourn, bemoan'.
[Mat. 337].

**g/o/rʌ 'burn': IE *gʸher- 'burn, hot'; ?Alt. */g/or´ʌ- 'ignite'; AA *gʸr- 'burn'.
[Cf. #95 **gUrʌ 'hot coals'] [Mat. 337].

**guɬʌ 'smooth': IE *ghleHdh- 'smooth, bald'; Ural. *küɬʌ 'smooth'; Kart. *glu 'smooth'; AA *gʸl- 'bald'.
[Cf. #84 **gi/ɬ/ḫu 'smooth and shiney'] [Mat. 335].

**gunʌ 'chop off': IE *gʸhen- 'chop off branches, mow, beat'; Kart. *gun- 'mow'.
[Mat. 352].

**g/u/nʌ 'think, become lost in thought': Alt. *gūn(y)- 'think, be sad'; Kart. *gon- 'think, recall'.
[Cf. #89 **gu/nH/i 'think'] [Mat. 339].

**gupʌ 'bend': IE *gheub- 'bend'; Alt. *gub(ʌ)- 'bend', ?*gübä- 'bent, crooked'; ?Kart. *gib- 'sprain'; AA *g(w)b 'bend; spine, back'.
[Cf. #92 **güpA 'bend'] [Mat. 336].

**gupʌ 'empty': IE *gupā (prob. < *gheup-) 'hollow, cavity'; ?Ural. *kupa 'cavity, depression'; AA *gwp 'empty, cavity'.
[Cf. #87 **gopa 'hollow, empty'] [Mat. 358].

**gurʌ 'gullet': IE *gʷer(H)- 'swallow'; Alt. *gürä- 'neck'; Ural. *kürke 'gullet, internal body cavity'; Drav. *kurʌ- 'throat, voice'; ?Kart. *qorq- 'gullet, throat'; AA *g(w)r- 'gullet'.
[Cf. #91 **gurʌ (descriptive) 'swallow'] [Mat. 335-6].

**gülʌ 'dwelling': Alt. *g/ü/lä 'house, dwelling'; Ural. *külä 'house, village'.
[Mat. 341].

**gʌlʌ 'skull': IE *ghōlu- 'head'; AA *gl(gl) 'skull, head'.
[Mat. 372].

**g/ʌw/lʌ 'heart': Alt. *gōlʌ 'middle'; Kart. *gul- 'heart'; AA *gwl- 'heart'.
[Cf. #86 **golHʌ 'heart'] [Mat. 364].

**9orʌ (descriptive) 'shout': IE *Hʷer- 'shout, appeal'; Alt. *ory- 'call'; Drav. *ăr-/*ār-/*arʌ 'shout'; Kart. *ɣ/a/r- 'sing, shout'; AA *gr- 'speak, poetry'.
[Mat. 345].

**9udʌ 'tie together': IE *Heudh-/*huedh- 'tie, ligament, belt'; Alt. *üdʌ- 'tie (w/belt)'; Kart. *ɣwed- 'belt'.
[Mat. 364].

?**/9/ʌlpʌ 'weak': IE *Help-; Kart. *ɣalp-.
[Cf. #96 ?**9alpa 'weak, unable'] [Mat. 365].

**9ʌmʌ 'dark': Kart. *ɣame 'night'; AA *gm 'dark'.
[Cf. #99 **9ʌmʌ 'darkness, night'] [Mat. 368].

**9urʌ 'liquid': IE *Heur-/*Hu̯er- 'liquid'; Alt. *ūrʌ- 'flow, pour'; Kart. *ɣwar- 'wet, to pour; AA *gwr- 'moist, damp, soak into, a flow'.
[Cf. #98 **9uru 'to flow, pour'] [Mat. 341].

**9ʌrķʌ 'bend': IE Herkʷ- 'smthg. bent'; Kart. *ɣrek- 'bend'.
[Cf. #97 ?**9arķu 'bend, to curve'] [Mat. 336].

**9ʌrʌ (descriptive) 'boar': Kart. *ɣor- 'pig'; AA */g/r- 'boar'.
[Mat. 363].

**ɣa/ķ/ʌ 'water': IE *Hekʷā 'water, river'; Alt. *āk(ʌ)- 'flow'; ?Drav. *āk 'swamp'; AA *ʕķʷ 'water, to pour'.
[Cf. #139 **ʕEķu 'water'] [Mat. 334].

**γ/o/ʕ́ʌ 'branch': IE *H̯ezdo- 'branch'; ?Alt. *aǩa 'branch'; AA *ʕd̲ 'tree'.
[Cf. #141 **ʕʌʔʌ 'branch'] [Mat. 333].

**γʌrʌ 'eagle': IE */H´/er-; AA *ʕr(j).
[Mat. 352].

**h/a/wʌ 'desire': IE *Heu̯- 'desire, demand'; Drav. *āv- 'desire'; AA *hw(j) 'desire, love'.
[Cf. #100 **hawʌ 'desire passionately'] [Mat. 340].

**h/u/rʌ 'conceive': IE *H̯er- 'child, give birth to'; AA *h(w)r 'conceive, child'.
[Mat. 342].

**/ḫ/angʌ 'open wide, gape': ?IE *Hen/gh/- 'opening'; Alt. *aŋa- 'open, jaws, opening'; Ural. *aŋa 'open', *oŋe 'mouth, opening'; Drav. *aṅkʌ- 'open wide, gape'; ?AA *ḫng/*ḫnk 'sky, pharynx'.
[Cf. #105 **Hanga 'to open the mouth wide'] [Mat. 358].

**ḫujʌ 'live': IE *Heiu̯- 'life force'; Alt. *ujʌ 'alive, vital'; AA *ḫjw 'live'.
[Cf. #101 **ḫaju 'live, life force'] [Mat. 341].

**ḫʌwʌ (descriptive) 'speak, talk': IE *Heu-, *Heud-/*Hu̯ed-; AA *ḫw- 'relate, communicate'.
[Mat. 337].

{**Ha} 'become': Alt. *ō-; Drav. *ā-.
[Cf. #102 ?**Ha 'become, be'] [Mat. 367].

**/H/alʌ 'food': IE *Hel- 'feed'; Alt. *al´i 'food'; ?AA *?l- 'fat, strength'.
[Cf. #123 **?al´a 'food'] [Mat. 354].

?{**Halʌ} 'front': Alt. *ālʌ; Ural. *alka- 'beginning, end'.
[Cf. #104 **Halʌ 'foreward edge'] [Mat. 354].

**{H}erʌ 'fall to pieces, disintegrate': IE *er(H)- 'fall to pieces, disintegrate'; Alt. *erʌ 'pain, torment'; Ural. *erä- 'fall to pieces, disintegrate'; Drav. *ir̲- 'fall to pieces, disintegrate, die'.
[Cf. #107 Herä 'fall down, collapse'] [Mat. 359].

**{H}erʌ 'male (of species)': Alt. */e/rä 'male, man'; Drav. *ēr̲- 'male'.
[Cf. #108 **Herä 'male (of species)'] [Mat. 362].

?**{H}erdʌ 'early': Alt. *erdä-, *ēr; Kart. *a/rd/-.
[Mat. 359].

{**Henkʌ} 'fire': IE *egni- 'fire'; Ural. *eŋkʌ- 'burn'.
{Metathesis in IE form} [Mat. 352].

{**HesX-r̥-} 'blood': IE *esH-r̥-; Kart. *sisx-l̥-.
[Mat. 345].

?{**HEnPʌ} 'navel': IE *H´enbh-/*H´nebh-; Kart. *u(m)p̥e-; AA */h/n(d)b.
[Cf. #110 ?**HEnPʌ 'navel'] [Mat. 358].

**/H/indʌ 'hot weather': IE *Heidh-/*hi(n)dh- 'hot weather, heat, to burn'; Ural. *yntʌ 'hot weather, heat'.
[Mat. 340]..

**{H}/i/rʌ 'drag': Alt. *yrʌ- 'drag, furrow'; Drav. *īr-/*īr̤- 'drag'.
[Cf. #112 **Hir´a 'drag'] [Mat. 368].

{**Hitä} 'grow': Alt. *idä 'strength, ripe, adult'; Ural. *itä- 'grow, to appear'.
[Mat. 359].

{**Hoķi} 'point, (cutting) edge': IE *Hʸeḱ-; Alt. *oky.
[Cf. #113 **Hoķi 'point, (cutting) edge'] [Mat. 353].

**/H/o/ķ/ʌ 'see': IE *Hʷekʷ- 'see, eye'; ?Alt. *uka- 'understand'; Drav. *akʌ- 'understand, know'.
[Cf. #118 **Huķa 'eye, to see'] [Mat. 333].

**{H}om/ç/ʌ 'meat': IE *mēmso-; Ural. *omśa; ?Drav. *ū(n)c-; ?AA *m/ṣ/-.
[Cf. #114 **Homsa 'meat'] [Mat. 350].

**{H}ongʌ 'jaws': ?Alt. *öŋä-/*/ä/ŋä- 'palate, chin'; Ural. *oŋe- 'jaws'; Drav. *aṅkʌ- 'palate'.
[Mat. 371-2].

{**Horä} 'raise, rise': IE *er- 'raise, rise'; Alt. *orʌ- 'rise, enter'; ?Drav. *ēr̤- 'rise'.
[Cf. #116 **Horä 'rise'] [Mat. 355].

{**Hosʌ} 'ash-tree': IE *Hʸe(k)s- 'ash'; Ural. *okśa 'ash, poplar'.
[Cf. #117 ?**Hosʌ 'ash-tree'] [Mat. 373].

**/H/oţʌ 'fire': IE *Hʸet-, *Hʸet-r- 'fire'; Alt. *otʌ 'fire, hearth'.
[Cf. #343 **qoţi 'light, fire'] [Mat. 352].

**{H}urʌ 'burn': Alt. *urʌ- 'sparkle; anger'; Drav. *ur- 'burn'; AA *?wr 'fire, shine, glow'.
[Mat. 337].

{**Huwa} 'water': Alt. *ū 'water'; Ural. *uwa 'a flow'.
[Cf. #119 **Huwa 'flow of water'] [Mat. 334].

{?**Hütʌ} 'sleep': Alt. *udy-; Ural. *oδa-.
[Cf. #120 ?**Hütʌ 'rest time'] [Mat. 367].

?{**HUNʌ} 'tame, domesticated': Alt. *u/ń/a 'obedient'; Ural. *ońe 'tame'.
[Mat. 362].

{**HʌSʌ} 'ear': IE *Heus- 'ear'; AA *(h)w/š̆/ 'ear, hear'.
[Mat. 370].

{**?amu} 'morning': IE *Hēm- 'day'; Ural. *oma/*āmʌ 'morning'; ?AA *?mr 'dawn, to see'.
[Cf. #124 **?amu 'morning, daylight'] [Mat. 370].

?{**?anqʌ} 'breathe': IE *HenH-; AA *?nh.
[Cf. #125 **?anqʌ 'breathe'] [Mat. 340].

**{?}/a/rbʌ 'conjure, practice witchcraft': Alt. *arba-; Ural. *arpa 'wand'.
[Cf. #126 **?arba 'practive witchcraft'] [Mat. 344].

{**?aSa} 'fire': IE *Hĕs- 'hearth, to dry over fire'; Alt. *asa- 'begin to burn'; ?AA *?š̆ 'fire'.
[Cf. #127 **?aSa 'fire'] [Mat. 352].

**{?}elʌ 'live': Alt. *ēl 'settlement, people, country'; Ural. *elä- 'to live'; ?Drav. *il 'dwelling, house'; ?Kart. *er- 'people'; ?AA *?hl 'tribe, dwelling'.
[Cf. #131 **?elA 'live'] [Mat. 341].

**{?}eśʌ 'be': IE *es- 'be'; Ural. eśʌ-/*aśʌ- 'live, reside'; AA *?/š̆/ 'be'.
[Cf. #132 **?esA 'settle a place, be at a place'] [Mat. 333].

{**?Emʌ} (descriptive) 'seize': IE *em- 'take'; ?Ural. *amta- (< *am(e)-ta-) 'give'; AA *?m- 'seize, take'.
[Cf. #133 **?Emʌ 'seize, take'] [Mat. 371].

{**?ili} 'deer': IE *el-; AA *?jl.
[Cf. #135 **?ili 'deer'] [Mat. 352].

{**?itä} 'eat': IE *ed-; Alt. *idä-; ?AA *t(j).
[Cf. #136 **?itä 'eat'] [Mat. 340].

{**ʕal′ʌ} 'across': IE *Hel- 'across, above'; Alt. *āl′- 'across, above, cross a mountain'.
[Cf. #137 **ʕal′ʌ 'cross (mountain)'] [Mat. 372].

{**ʕ/e/bu} 'bosom': Alt. */ä/bü- 'bosom'; Kart. *ube-/*uba- 'bosom, breast'; AA *ʕb(b) 'bosom, breast'.
[Cf. #138 **ʕ/e/bu 'bosom, breast'] [Mat. 354].

**jamʌ 'sea': Ural. *jamʌ 'sea'; ?Drav. *am(m)- 'water'; AA *jm(m) 'sea, water'.
[Cf. #144 ?**jamʌ 'water'] [Mat. 349].

**jarʌ 'shine': Alt. *jara- 'shine'; Drav. *ēr- 'shine, burn', *erʌ 'shine'.
[Cf. #145 ?**jarʌ 'shine'] [Mat. 364].

**jä/H/ʌ 'belt': IE *i̯eH$^{u̯}$s- 'engirdle, belt'; Ural. *jä/ɣ/ʌ 'belt'; ?Drav. *yā- 'tie'.
[Cf. #143 **jaHU or **joHʌ 'tie, engirdle'] [Mat. 356].

**jän/k/ʌ 'ice': ?IE *i̯eg- 'ice'; Alt. *j/ä/ŋʌ 'freeze, ice crust'; Ural. *jäŋe 'ice'.
[Mat. 346].

**jän/t/ʌ 'tighten': Ural. *jäntek 'bowstring'; Drav. *ēnt- 'extend, strectch out (hand)'.
[Cf. #147 ?**jänTʌ 'tighten, extend'] [Mat. 350].

**je(Hʌ) 'come, arrive': IE *ei(H)-/i̯eH- 'go, ride'; Alt. *ī- 'enter, arrive'; Ural. *je(ɣʌ)- 'arrive'; Kart. *ī- 'arrive, attain'; AA *j? 'arrive'.
[Cf. #130 **?ejʌ 'come, arrive'] [Mat. 357].

**jelʌ 'sparkle': Ural. *jelä 'sparkle, light, day'; Kart. *(j)el- 'flash (re: lightening)'.
[Cf. #148 **jela 'light (not dark)'] [Mat. 362].

**ju/k/ʌ 'pour': Alt. *jügi- 'pour'; Drav. *ukʌ- 'pour, spill'.
[Mat. 347].

{**kaĭ̯ʌ} 'run': Alt. */k/aĭ̯(ʌ)- 'run away'; Ural. *kaĭ̯e- 'run'.
[Cf. #181 ?**Kaĭ̯ʌ 'move with effort'] [Mat. 330].

**kaljʌ 'bare, naked': IE *gol- 'bare, bald'; Alt. *kal′(ʌ)- 'bare, bald'; Ural. *kaljʌ 'bald'.
[Cf. #156 **kal′ʌ 'strip bark, to skin'] [Mat. 337].

**/k/al′ʌ 'film, pellicle': Alt. */k/a/l′/i- 'top layer, bark'; Ural. *kal′ʌ- 'film, pellicle, crust, scale'.
[Mat. 354].

**kampʌ 'lip': IE *gombh- (prob. < *gomb-) 'lip, jaw'; AA */k/mp(1)- 'lip'.
[Cf. #kanpʌ 'soft growth'] [Mat. 338].

**kamʌ 'seize': IE *gem- 'seize, squeeze'; Alt. *kamʌ- 'tear off, squeeze'; Ural. *kama-/*koma- 'handful, hand'; AA *km- 'seize'.
[Cf. #157 kamu 'seize, squeeze'] [Mat. 370-1].

{**kama} 'skin, peel, scales': Alt. */k/ama- 'tetter, mange; scab'; Ural. *kama- 'crust, peel, skin, scales'.
[Mat. 372].

**kantʌ 'take': IE *ghe(n)d- (probab. < *ge(n)d-) 'seize, hold'; Alt. *kantʌ- 'obtain with hand'; Ural. *kantʌ- 'carry'.
[Mat. 332].

{**karʌ/**kurʌ} (descriptive) 'crane': IE *gerH-; Alt. *karʌ-/*kurʌ-; Ural. *karke/*kurke; Drav. *korʌ-; AA *krk.
[Cf. #159 **karʌ/**kurʌ (descriptive) 'crane'] [Mat. 341].

**k/ä/ɤ̆ʌ 'arm, hand': ?Ural. *käte; Drav. *kac-; AA *k/t̲/.
[Mat. 362].

{**kä/lH/ʌ} 'wander': Alt. *k`uly- 'roam, wander, walk'; Ural. *kulke- 'wander'.
[Cf. #161 **kä/lH/ʌ 'go, wander' and **käl(ʌ)] [Mat. 332].

**käl(ʌ) 'to ford': Alt. *käl(ʌ)- 'arrive'; Ural. *kälä- 'ford, make it to shore'.
[Cf. #161 **kä/lH/ʌ 'go, wander'] [Mat. 332].

**kälʌ 'female relative by marriage': IE *ǵ$_e$lōu̯ 'husband's sister'; Alt. *kälin 'son's wife, brother's wife, daughter-in-law, sister's husband'; Ural. *käl/ew/ 'husband's sister, wife's sister, sister's husband'; Drav. *kalʌ- 'husband's sister, mother's sister'; ?Kart. *kal- 'woman'; AA *kln 'son's wife, bride'.
[Cf. #162 **kälU 'female relative by marriage'] [Mat. 363].

?{**kämE} 'hard': Alt. */kä/mi 'bone'; Ural. *kämä 'hard'.
[Mat. 368].

**käwʌ 'chew': IE *ǵ(i̯)eu- 'chew'; Alt. *k/ä/bä- 'chew, jaw'; Drav. *kavʌ- 'jaw'.
[Cf. #160 **käjwʌ 'chew'] [Mat. 340].

**kertʌ 'cut': Alt. */k/erti- 'make incision, notch'; AA *krt 'cut (off)'.
[Mat. 361].

**ki/H/ʌ (descriptive) 'sing': IE *ge/iH/- 'sing (re: birds), enchant'; Ural. *kɣ̄ɣʌ- 'sing mating call'.
[Cf. #164 **k/iH/ʌ (descriptive) 'sing'] [Mat. 354].

**kinʌ 'know': IE *ǵenH$^{ɤ̆}$-/*ǵneH$^{ɤ̆}$- 'know'; ?Kart. *gen-/*gn- 'understand, realize'; AA *kjn 'know'.
[Cf. #163 **kENʌ 'know'] [Mat. 343].

**kirʌ 'old': IE *ǵer- 'old, brittle'; Drav. *kir̤ʌ- 'old'.
[Cf. #165 ?**kirHʌ 'old'] [Mat. 367].

**kiwʌ 'stone, rock': Ural. *kiwe; Kart. *kwa; AA *kw-.
[Cf. #166 **kiwi 'rock, stone'] [Mat. 343].

{**Koki} 'pursue, follow': Alt. */k/ogʌ 'track, pursue, chase'; Ural. *koke- 'search'.
[Cf. #183 ?**Koki 'follow, track'] [Mat. 335].

?**koja 'bark': IE *gɤ̆eiH- 'hide, skin'; Ural. *koja 'bark'.
[Cf. #169 **kojHa 'skin, bark'] [Mat. 345].

**koj/H/ʌ 'fat, grease': IE *gɤ̆eiH$^{ɤ̆}$-/*gɤ̆ieH$^{ɤ̆}$- 'live, eat'; ?Alt. */k/ojʌ 'viscous, thick'; Ural. *k/o/ja 'fat, greasy'.
[Cf. #169 **kojHa 'fatty, greasy, healthy'] [Mat. 341].

**kojwʌ 'birch': Alt. *k/ũ/bʌ 'birch, birch-bark'; Ural. *kojwʌ 'birch'.
[Cf. #170 ?**kojw/a/ 'birch'] [Mat. 330].

**kolʌ 'fleece': Alt. *kolʌ- 'skin, bark'; Ural. *kolʌ- 'fleece, strip bark'.
[Cf. #171 ?**koλʌ 'bark, skin, peel'] [Mat. 351].

**komţʌ '(dish) cover': Alt. *kˇ/o/mta-; Ural. *komta-/*kamte-.
[Mat. 356].

?**k/o/ndʌ 'spoil, ruin': IE *gʷe(n)dh- 'ruin, destroy'; AA *gʷ(n)d 'to harm'.
[Mat. 356].

**k/o/ń/g/ʌ 'hollow, (arm)pit': Alt. *koŋ́ʌ 'hollow, armpit'; Ural. *kaŋ́el 'armpit'; Drav. *kaṅkʌ- (w/irregular phonetic development) 'armpit'.
[Mat. 370].

**kudʌ 'male relative by marriage': Alt. *kükä- 'son-in-law, sister's husband, husband's sister's husband', ?*/k/uda 'father of son-in-law/daughter-in-law'; Ural. *küδʌ 'brother-in-law'.
[Cf. #174 **küda 'male relative by marriage'] [Mat. 363].

**kulʌ 'cold': Alt. *köl´- 'freeze'; Ural. *külmä 'cold'; Drav. *kuḻʌ- 'cold'; Kart. *kwel- 'cool, catch cold'.
[Cf. #176 kül´ʌ '(be) cold'] [Mat. 371].

**kułʌ 'worm': Alt. *kuly- 'worm, snake'; Ural. *kułʌ 'worm, tapeworm'; ?Kart. *gwel- 'snake'.
[Cf. #179 **kUłʌ 'snake, worm'] [Mat. 372].

?{**kumä} 'overturn': Alt. *kömʌ-; Ural. *kuma-.
[Cf. #184 **Kumä 'overturned'] [Mat. 352].

**/k/umʌ 'brittle, porous, loose': Alt. */k/um 'sand'; Ural. *kumʌ 'porous snow'.
[Mat. 362].

**k/u/nʌ 'woman': IE *gʷenā 'woman'; ?Alt. *küni; AA */kʷ/n- 'one of many wives'.
[Cf. #178 **küni 'wife, woman'] [Mat. 340].

**ku/p/sʌ 'be extinguished, go out': IE *gʷes- 'be exinguished, go out'; Ural. *kupsa- 'put out, go out'; ?AA *kbh 'go out'.
[Cf. #185 **KuPśa 'be extinguished, put out'] [Mat. 335].

?{**küjñA} '(knee, elbow) joint': IE *ǵenu/*ǵneu- 'knee'; Ural. *küjñ 'elbow'.
[Cf. #175 ?**küjñA 'bend at joint, bone flexion'] [Mat. 368].

**k/y/ǰʌ 'summer': Ural. *k/y/čʌ 'summer heat, warm'; AA *kjţ 'summer heat, warm'.
[Cf. #224 **ĶEǰa 'summer heat'] [Mat. 346].

{**Kar´ä} (see /ķ/erʌ) 'bark': Alt. */kᶜ/ār´(ʌ); Ural. *kōre.
[Cf. #217 **Kar´ä 'bark'] [Mat. 345].

{**KümTä} 'fog': Alt. */k/üdä-; Ural. *küntʌ.
[Cf. #187 ?**KümTä 'fog'] [Mat. 370].

{**KuS/Cʌ} 'fall down, collapse': Ural. *ku/ś/e- 'collapse'; Drav. *kucʌ- 'fall, collapse'.
[Cf. #186 ?**Ku/s/i 'fall'] [Mat. 362].

{**KUPʌ} (descriptive) 'bubble': Ural. *kupla; Drav. *koppʌl.
[Mat. 358].

**/ķ/açʌ 'bone': IE *kost-; AA *ķṣ-.
[Cf. #219 **ĶaSʌ 'bone'] [Mat. 345].

**ķadʌ 'build': IE *ket- (prob. < *kedh-) 'primitive dwelling'; Drav. *kaṭṭ- 'fasten, build'; Kart. *ķed-/*ķad- 'build'; AA *ķd- 'build, to shape pots'.
[Cf. #192 ķadʌ 'weave (from twigs)'] [Mat. 368].

**ķajćʌ '(young) man': Ural. *kajćʌ 'guy, groom'; Kart. *ķaç(1)- 'husband, man'.
[Cf. #191 **ķaćʌ 'male, youth'] [Mat. 349].

**/ķ/ajwʌ 'dig': IE *kaiu̯- 'hole'; ?Alt. */kᶜ/aja- 'throw'; Ural. *kajwa- 'dig, throw'.
[Cf. #209 Ķajwʌ 'dig'] [Mat. 362].

**/ķ/alʌ 'burn': Alt. */kᶜ/ala-; Drav. *kāḷʌ- 'burn'; AA *ķlw 'to burn, fry'.
[Cf. #208 **Ķajla 'hot, to burn'] [Mat. 341].

**/ķ/alʌ 'high, tall': IE *kel(H)- 'high, tall, raise'; Alt. */kᶜ/aly- 'rise, fly up'; ?Kart. *ķʌlatx- 'high, height'; AA *ķl- 'high, tall, raise'.
[Cf. #210 **ĶaLi 'rise, raise'] [Mat. 335].

**ķaλʌ 'leave (tr.)': Alt. *kᶜala- 'remain, wait'; Ural. *kað´a- 'leave (tr.)'; Kart. *ķel- 'leave (tr.)'; AA *ķlʕ 'abandon'.
[Cf. #194 **ķaλa 'leave (tr./intr.)'] [Mat. 352].

**/ķ/a/n/ʌ 'give birth to': IE *ken- 'give birth, young being'; Drav. *kan̲-, *kan̲r- 'give birth, young being'; AA *ķn- 'give birth, create'.
[Cf. #211 Ķanʌ 'give birth to, be born'] [Mat. 361].

**/ķ/aṗʌ 'cover': Alt. */kᶜ/apa- 'cover'; Drav. *kapp- 'cover'; AA *ķpr 'wrap up, cover'.
[Cf. #212 Ķaṗa 'close, cover'] [Mat. 356].

**ķa/p/ʌ 'chop': IE *kep- 'chop, dig'; Kart. *ķap- 'chop'.
[Cf. #193 **ĶaHPʌ (descriptive) 'chop, dig'] [Mat. 362].

**/ķ/apʌ (descriptive) 'seize': IE *keHp- 'seize, take'; Alt. */kᶜ/ap(ʌ)- 'seize'; Ural. *kappʌ- 'seize'; Drav. *kapp- 'seize food', *kavʌ- 'seize'; AA *ķp-/*ķb- 'take, seize'.
[Cf. #190 (descriptive) **ķaba/*ķapa 'seize'] [Mat. 371].

**/ķ/apʌ 'vessel' (> 'skull'): IE *kap- 'vessel', *kap- 'skull, head'; Alt. *kᶜāp 'vessel, box'; AA *ķp 'vessel', *ķp 'skull, head'.
[Cf #195 **ķapʌ 'nape of neck, head'] [Mat. 366].

**ķar(w)ʌ 'viscera': IE *ker(ų)- 'abdomen'; Alt. */kᶜ/ar(b)yn 'abdomen'; Drav. *karʌ 'viscera', *kar- 'fetus'; Kart. *karw-/*kwar- 'abdomen'; AA *ķrb 'viscera'.
[Cf. #214 **Ķarb/i/ 'abdomen, viscera'] [Mat. 334].

**/ķ/arʌ 'black': IE *ker-, *kers-; Alt. */kᶜ/ara; Drav. *kar-/*kar-; AA */ķ/r-.
[Cf. #213 **Ķar/ä/ 'black, dark colored'] [Mat. 372].

**ķarʌ 'hearth': IE *ker- 'hearth, fire in hearth'; Kart. *ķera 'hearth'; AA *ķrr 'burn (over fire)'.
[Cf. #215 **Ķarʌ 'burn'] [Mat. 353].

**/ķ/aš̆ʌ 'scratch': IE *kes-; Alt. *kᶜaš̆y-.
[Cf. #218 **Ķaš̆ʌ 'scrape, scratch'] [Mat. 372].

**ķ/ä/ćʌ 'cut': IE *ḱes- 'cut'; ?Alt. *kᶜ/ä/sä- 'cut'; Ural. *k/ä/ćʌ 'knife'; Kart. *ķc(1)- 'cut off'; AA *ķš̆-/*ķs- 'cut'.
[Cf. #196 **ķäćä 'cut'] [Mat. 360].

**/ķ/äpʌ 'hoof':IE *ḱepH- 'paw with claws, hoof'; Ural. *käppä 'paw'; AA *ķ/p/ 'hoof, sole'.
[Cf. #222 **Ķäpä 'paw'] [Mat. 344].

**ķärʌ 'tie together': IE *ḱer- 'weave'; Alt. *kᶜ/ä/rʌ- 'tie'; Ural. *kärʌ- 'ligament, intertwine'; Kart. *ķar-/*ķr- 'tie'; ?AA *kr- 'wrap in'.
[Cf. #197 **ķärʌ 'tie tight'] [Mat. 363].

**ķelʌ 'need': Ural. *kelke- 'be needed, necessary'; Kart. *ķel-/*ķal- 'to need, not be sufficient'.
[Cf. #198 **ķelʌ 'be insufficient'] [Mat. 351].

**/ķ/eñʌ 'light (not heavy)': ?IE *ḱen- 'empty, worthless'; Alt. *k`/e/ńü 'light'; Ural. *keñʌ 'light'.
[Cf. #226 **ĶEñU 'empty, light'] [Mat. 346].

**/ķ/erjʌ 'call': Alt. *kᶜ/ē/ri- 'call'; Ural. *kerjʌ- 'ask'.
[Cf. #199 **ķerjä (descriptive) 'shout'] [Mat. 342].

**/ķ/erʌ 'bark': Alt. *kᶜ/e/rä- 'skin'; Ural. *kere 'bark'; AA *ķrm 'bark, skin'.
[Cf. #217 **Kar´ä 'bark'] [Mat. 344].

**/ķ/etʌ 'fall': IE *ḱ/a/d-; Drav. *keṭʌ-.
[Cf. #225 **ĶetʌA 'to fall'] [Mat. 353].

**/ķ/il(k)ʌ '(thick) hair': IE *ḱel- 'thin stem, thick hair'; Alt. */kᶜ/ylga 'horse's hair'; Ural. *kalke 'hair, combings'; Drav. *kel(k)- 'hair, feather'.
[Cf. #228 **Ķila 'stem, hair'] [Mat. 228].

**/ķ/inʌ 'be angry': Alt. */kᶜ/yna- 'be angry, condemn'; Drav. *kiṉʌ- 'be angry'; AA *ķn? 'be jealous'.
[Cf. #229 **Ķin/u/ 'be angry, jealous'] [Mat. 364].

**/ķ/ir(H)ʌ 'crown (of head)': IE *ḱerH- 'crown, horn'; Ural. *kīrʌ 'crown, nape of neck'; AA *ķrn 'horn'.
[Cf. #227 **ĶErʌ 'horn'] [Mat. 348].

**/ķi/rʌ 'hoarfrost': IE *ḱer-(s)n- 'hoarfrost, ice crust'; Alt. */kᶜ/yr(ʌ)- 'hoarfrost'; Ural. *kirte 'hoarfrost'; AA *ķr- 'ice, to freeze'.
[Cf. #230 **ĶirʌA 'hoarfrost'] [Mat. 343].

**ķirʌ 'scrape, scratch': IE *ḱer(H)- 'wound, harm'; Alt. */kᶜ/yr(ʌ)- 'scrape, scratch'; Drav. *kirʌ- 'scrape, scratch'; ?AA *ķrḥ 'wound'.
[Cf. #231 **ĶirʌA (descriptive) 'scrape, scratch'] [Mat. 365].

**/ķ/o/ç/ʌ 'box': IE *kʷas- 'wicker basket'; Ural. *kośʌ 'birch bark box'; ?AA *ķ(w)ş- 'basket'.
[Cf. #241 **ĶUćʌ 'wicker basket'] [Mat. 345].

**ķolʌ 'fish': IE *kʷal-; Alt. *kᶜol-; Ural. *kala; ?Kart. *ķalmax-; AA *ķʷl-. [Cf. #155 **kalʌ 'fish'] [Mat. 362].

**ķol´ʌ 'round': IE *kʷel- 'rotate, wheel'; Alt. *kᶜol´ʌ- 'turn, roll'; ?Ural. *kol´ʌ- 'round, to surround'; ?Drav. *kāl 'wheel'; Kart. *ķwer- 'round'; AA *ķʷl- 'rotate'.
[Cf. #202 **ķol´ʌ 'round'] [Mat. 345-6].

**/ķ/oɬʌ 'lake': Alt. *kᶜōl 'lake, reservoir'; ?Ural. *keɬʌ 'pond, small swamp, river cove'; Drav. *k/o/ḷʌ 'reservoir, pond'; AA *ķʷl- 'reservoir, river'.
[Cf. #177 **küɬä 'lake, small reservoir'] [Mat. 352].

**/ķ/omʌ 'devour': IE *kʷem- 'devour, gobble down'; AA *ķʷm- 'devour'.
[Cf. #242 **ĶUmʌ 'swallow, devour'] [Mat. 355].

**ķorʌ 'lamb': Alt. */kᶜ/or´y/*/kᶜ/ur´y 'lamb'; Drav. *koṟi 'sheep'; Kart. *ķraw-/*ķrw- 'lamb'; ?AA *kr(r) 'lamb, sheep'.
[Cf. #173 ?**kOr´i 'lamb, sheep'] [Mat. 373].

**ķo/ṭ/ʌ 'cut': Drav. *kott- 'cut, chop, dig'; ?Kart. *ķwe(s(1))t- 'cut'; AA *ķʷtʕ 'cut'.
[Mat. 360].

**ɻudʌ 'tail': Alt. *kᶜudʌ; Kart. *ɻud-.
[Cf. #203 **ɻudi 'tail'] [Mat. 371].

**ɻujnʌ 'wolf': IE *ǩu̯ōn/*ǩun- 'dog'; Ural. *küjnä 'wolf'; ?AA *kᵚn 'dog'.
[Cf. #238 **ɻüjnA 'wolf, dog'] [Mat. 334].

**/ɻujʌ 'lie, rest (re: corpses)': IE *kᵚeiH′/*kᵚieH′- 'lie, rest'; Ural. *kujʌ- to lie'; ?Drav. *kē- 'lie, rest'; AA *ɻᵚj- 'remain, expect'.
[Cf.#233 **ɻoja 'lie, rest (re: corpses)'] [Mat. 355].

**/ɻ/ulʌ 'fall down, collapse': Alt. *kᶜulʌ- !fall down, collapse'; Ural. *kule- 'fall out, wear out'; Drav. *kūl- 'collapse'.
[Cf. #235 **ɻulʌ 'fall'] [Mat. 351].

**/ɻ/u/l/ʌ 'kin, family': IE *kᵚel- 'kin, big family, crowd'; Drav. *kūl̩ 'crowd, big family'; AA *ɻ(w)l 'clan, crowd'.
[Cf. #239 **ɻülä 'community, kin'] [Mat. 361].

**ɻuʌʌ 'secret': Alt. */kᶜ/ulʌ- 'steal'; Drav. *kuṯṯ- 'secret'; ?Kart. *ɻwel- 'hide'.
[Cf. #204 **ɻuʌa 'secret, to steal'] [Mat. 368].

**ɻ/u/nʌ 'marten': IE *keun-/*koun- 'marten'; ?Alt. *kᶜur′änä (?< *kˇünär′ä) 'marten, ferret, polecat'; Kart. *ɻwenr- 'marten'.
[Mat. 346].

**ɻ/u/pʌ 'pile': IE *keup-/*keub- 'pile, hill'; Alt. */kᶜ/ö/p/ʌ/ */kˇ/o/p/ʌ 'pile, stack'; Drav. *kupp-/*kuvʌ- 'pile'.
[Cf. #243 **ɻU/p/a 'pile'] [Mat. 346].

**/ɻ/upʌ 'foam': IE *keup-/*ku̯ep- 'boil, wander'; Alt. *kᶜöpä- 'to foam, wander'.
[Cf. #240 ɻüpä 'boil, swell'] [Mat. 354].

**/ɻ/urʌ 'fasten together': IE *kᵚer- 'build, make, arrange'; Alt. */kᶜ/urʌ- 'build, put in order'; Ural. *kure- 'fasten together'.
[Cf. #236 **ɻurʌ 'weave, tie together'] [Mat. 365].

**/ɻ/urʌ 'gnaw (re: insects)': IE *kᵚer(u)- 'gnaw', *kᵚr̥-mi- 'worm, larva'; Alt. */kᶜ/ur/*/k/or 'worm, larva'; ?Ural. *kürmʌ 'gadfly'.
[Cf. #234 **ɻorʌ 'gnaw, worm'] [Mat. 338].

**/ɻ/urʌ 'point, (cutting) edge': Ural. *kurʌ 'knife'; Drav. *kūr 'sharp'; AA *ɻwr 'bore, make a hole'.
[Cf. #344 **ɻurʌ 'point, cutting edge, to cut'] [Mat. 353].

**/ɻ/urʌ 'short': Alt. *kᶜorʌ/*kᶜurʌ; Drav. *kur̲-/*kūr̲ʌ; ?AA */k/r-.
[Cf. #244 **ɻUrʌ 'short'] [Mat. 345].

**ɻuṭʌ 'small': Drav. *kuṯṯ-/*kuṭʌ; Kart. *ɻuṭʌ-; AA *ɻᵚṯ-.
[Cf. #205 **ɻUṭʌ 'small'] [Mat. 348].

**ķʌbʌ 'bite': IE *ǵebh-/*ǵep(h)- (prob. < *ḱebh-) 'eat, devour, jaws'; Kart. *ķb-in- 'bite', *ķb-il- 'tooth'.
[Mat. 346].

**ķʌrdʌ 'heart': IE *ḱerd-/*ḱred- (prob. < *ḱerdh-) 'heart'; Kart. *mķerd- 'chest, breast'.
[Cf. #ķErdʌ 'chest, heart'] [Mat. 364].

{**ĶeLE} 'speak, talk': Alt. *kᶜelä- 'speak'; Ural. *kēle 'tongue'; ?Drav. */k/e/ḷʌ 'speak'.
[Mat. 336-7].

{**Ķurʌ} 'blood': IE *kreu(H)-; Drav. *kur-.
[Cf. #237 ?**Ķurʌ 'blood'] [Mat. 345].

**labʌ 'seize': IE *labh- 'seize'; Alt. *laba- 'drag by teeth'; AA *lbk 'seize'.
[Cf. #262 **Labʌ 'seize, obtain'] [Mat. 371].

{**laC/Sʌ} 'weak': IE *los- 'weak, destroyed'; Drav. *nac- 'weak, worn out'.
[Mat. 365].

**la/H/mʌ 'swamp': IE *l/o/Hmo- 'puddle, swamp'; Alt. *lāmu 'sea, swamp'; Ural. *lampe 'swamp, pond'; Drav. *namʌ 'moist, damp'; ?Kart. *lam- 'silt').
[Cf. #263 **LaHm/u/ 'swamp'] [Mat. 331].

**laķʌ (descriptive) 'lick': IE *lak- 'lick, to lap'; Ural. *lakkʌ- 'lick'; Drav. *nakk- 'lick'; Kart. *loķ-/*laķ- 'lick'; AA *lķ- 'lick'.
[Cf. #247 **laķʌ 'lick'] [Mat. 346-7].

**lamdʌ 'low': IE *lendh- 'lowland, field'; Alt. */l/amtʌ 'low'; Ural. *lamte 'low'.
[Cf. #264 **Lamd/i/ 'low, depression'] [Mat. 351].

**lapʌ, **laptʌ 'flat': IE *leHp- 'flat, palm, leaf'; Alt. *lapʌ-/*labʌ- 'flat', *lapta 'flat, leaf'; Ural. *lapa 'paddle, shoulder blade', *lapta 'flat'; AA *lp(1)- 'flat'.
[Cf. #256 **ɬapa 'flat'] [Mat. 355].

**l/a/pʌ (descriptive) 'lick': IE *lab-/lapH-; AA *lp(1)-.
[Mat. 347].

**laš̆ʌ (descriptive) 'lick': ?IE *les-; Kart. *lš̆-wn- 'lick, devour', *laš̆- 'lip'; AA *lš̆- 'lick, tongue'.
[Cf. #273 **LʌšʌA (descriptive) 'to lick'] [Mat. 347].

**lawč̆ʌ 'unattached, loose': IE *leus- 'unattached, loose, slack'; Ural. *lawča 'weakly fastened, slack'; AA *lwt̲ 'soften, knead'.
[Cf. #266 **Lawša 'weak, slack'] [Mat. 350].

**läjʌ 'pour': IE *leiH- 'pour'; Ural. *läjʌ 'pour'; AA *lj 'pour, water'.
[Cf. #267 **L/ä/jʌ 'water, to pour'] [Mat. 347].

**le 'be': Ural. *le- 'be, become'; Kart. *r- 'be'; AA *?l 'be'.
[Mat. 332].

**lejńʌ 'soft': IE *lei- 'soft, weak'; Ural. *lejńä 'weak, loose, slack'; AA *ljn 'soft, weak'.
[Cf. #258 **ɬejna 'soft, weak'] [Mat. 350].

**lewdʌ 'search, find': Ural. *lewɗä- 'find'; Drav. *nēṭ- 'find, acquire'.
[Cf. #251 ?**lewdä 'find'] [Mat. 358].

**lipʌ 'sticky': IE *leip- 'lubricate, to stick'; Alt. *lypa- 'stick'; Ural. *lyp(p)a 'slippery'; Kart. *lip- 'smooth'; AA *lp- 'lubricate, smooth'.
[Cf. #252 **lipa 'sticky'] [Mat. 347].

**loḳʌ 'fox': Alt. *luka/*loka- 'polar fox, dog'; Ural. *lo/kk/a 'fox'; Drav. *nakkʌ 'fox, jackal'; Kart. *leḳw- 'puppy, dog'.
[Cf. #270 **Luḳʌ 'small carnivore'] [Mat. 347].

**lopʌ 'fleece': IE *lep- 'fleece, skin, peel'; ?Alt. *lop(ʌ)- 'fleece, skin, peel'; Ural. *loppʌ 'bark basket'; AA *lp? 'bark, peel'.
[Cf. #268 ?**Lopʌ 'peeled off bark, thin layer of plant material'] [Mat. 351].

**lubʌ 'thirst': IE *leubh- 'desire, love'; AA *lwb 'be thirsty'.
[Cf. #269 **Lubʌ 'be thirsty'] [Mat. 340].

**/l/ukʌ 'destroy': IE *leuǵ-/*leug- 'destroy'; AA *lwk 'gnaw, tooth'.
[Mat. 358].

**lulʌ (descriptive) 'sleep': Kart. *lul- 'doze, sleep'; AA *lwl 'doze', ?*ljl 'night'.
[Mat. 367].

**luńgʌ 'snow': Alt. *luńa; Ural. *luńe.
[Cf. #354 **luńge 'snow'] [Mat. 366].

**lʌgʌ 'lie': IE *legh- 'lie, lay'; Kart. *lag-/*lg- 'lay, put, lie'.
[Cf. #271 **Lʌga 'lie'] [Mat. 346].

**lʌpʌ 'lip': IE *leb-/*lab-; AA */l/b.
[Mat. 338].

**l´amʌ 'fragile, brittle': IE *lem- 'brittle, weak'; Ural. *l´ama 'mash, knead; weak; AA *lm- 'soft, pliable'.
[Cf. #254 **l´ama (descriptive) 'to mash, knead, soften'] [Mat. 371].

**łakʌ 'leg': IE *le/g/- 'part of the leg'; Ural. *łakʌ 'leg, step, paw'; Drav. *tāk- 'walk'; AA *lkʸ- 'leg'.
[Cf. #255 **ł/a/ḳa 'leg (crus)'] [Mat. 351].

?**łäpʌ 'cover': Alt. *t/ä/p(ʌ)- 'close'; Ural. *läppe- 'cover'.
[Mat. 356].

**łiwHʌ 'dirt, mud': IE *leuH-; Ural. *łȳwa; ?Kart. *lia.
[Cf. #259 **łiwa 'dirt, mud, silt'] [Mat. 338].

**łokʌ 'collect, gather' (> 'count'): IE *leǵ- 'collect, count'; Alt. *toga 'number'; ?Ural. *luke- 'count'; Drav. *tok- 'collect'.
[Mat. 366].

**łon/ḳ/ʌ 'bend, incline, bow': IE *lenk- 'incline, bend, break apart'; ?Alt. *toŋʌ- 'incline, bend'; Ural. *łoŋka- 'incline, bend, break apart'; Drav. *toṅk- 'incline, hang'.
[Cf. #260 **łonḳa 'bend'] [Mat. 350].

**łu/ḳ/ʌ 'thrust, shove': Ural. *łükkʌ- 'shove, push, throw'; Drav. *tukk- 'shove'; ?AA *lw/ḳ/ 'throw'.
[Cf. #261 **łüḳʌ 'pierce, shove, thrust'] [Mat. 366].

**L/a/ṭʌ 'liquid': IE *lat- 'liquid, moist, damp'; Kart. *lṭw 'wet, moisten'.
[Cf. #265 **L/a/ṭʌ 'moist, damp'] [Mat. 341].

{?**ƛäƛʌ} 'spleen': Alt. *täłʌ-; Ural. *ẟ′ä/ẟ′/wä.
[Mat. 364].

**ƛo/mH/ʌ 'bird cherry': Alt. *dymu; Ural. *ẟ̄ōme.
[Cf #274 ?**ƛa/mH/u 'bird cherry'] [Mat. 372].

**magʌ 'big': IE *meǵ(h)- 'big'; Drav. *mā 'great'; ?Kart. *mag-ar- (Georgian magar- 'powerful, strong'.
[Cf. #280 **manga 'powerful, strong'] [Mat. 331].

**magʌ 'earth': IE *meǵh-; Ural. *māγe.
[Mat. 342].

?{**m/a/jd} 'tree, wood'; Alt. *mō(d) 'tree, wood'; Ural. *maj/ẟ/â 'forest'.
[Mat. 339].

**majƛʌ 'honey': IE *mel- 'honey'; ?Alt. *bal 'honey'; Ural. *majẟ′ʌ 'sweet, sap'; Drav. *maṭṭ- 'honey'; AA *mlb 'honey'.
[Cf. #276 **majƛʌ 'honey, sweet sap'] [Mat. 348].

**malʌ 'big': IE *mel- 'big, good'; Drav. *mal 'abundance, big'; AA *ml/ḫ/ 'good'.
[Cf. #278 **malʌ 'numerous, abundant'] [Mat. 331].

**manʌ 'stop, end': Alt. *mana- 'end, consume'; Drav. *mān-/*māṉ- 'to stop'; AA *mnʕ 'forbid'.
[Cf. #279 ?**mana 'stop, end, restrain'] [Mat. 357].

**m/a/nʌ 'think': IE *men(H)- 'think, mention'; Ural. *mana-/*monʌ- 'to prophesy, to speak'; Drav. *maṉ- 'ask, beseech'; AA *mn(j) 'understand, desire'.
[Cf. #281 **manu 'think'] [Mat. 339].

**mar(j)ʌ 'berry': IE *moro- 'blackberry, mulberry'; Ural. *marja 'berry'; Kart. *marçqw- 'wild strawberry'.
[Cf. #282 **marja 'berry'] [Mat. 373].

**marʌ 'wood': Ural. *m/a/re 'wood, tree'; Drav. *marʌ 'tree, wood'; ?AA *mrw 'type of wood'.
[Cf. #283 **marʌ 'wood'] [Mat. 339].

**m/a/rʌ 'spot, stain, blot': IE *mor- 'dirty; dark, stain'; Drav. *maṟ- 'spot, stain'.
[Cf. #288 **mArʌ 'stain, dirty'] [Mat. 358].

**marʌ 'youth': IE *merio- 'youth'; Ural. *mar(j)ʌ 'male'; Drav. *maṟʌ/*maṛʌ 'cub, young animal'; Kart. *māre 'man'; AA *m(h)r 'youth, cub, man'.
[Cf. #277 **majrʌ 'young male'] [Mat. 373].

**m/äḥ/ɣ̌ʌ 'water': IE *m/o/Hr- 'sea, swamp'; Alt. *mörä- 'water, river'; ?Ural. *m/a/rʌ 'moist, damp, submerge'; Drav. *mārʌ- 'water, rain'; Kart. *m/e/re 'lake, swamp'; AA *bḥr 'flood, river, sea'.
[Cf. #294 **mär´ä 'moisture, moist, damp'] [Mat. 334].

**mäkʌ 'hill': Alt. *m/äg/ʌ 'steep bank'; Ural. *mäke 'hill'.
[Mat. 371].

**mälgʌ 'breast': Ural. *mäl/ɣ/e 'breast'; AA *mlg 'breast, suck'.
[Cf. #291 ?** mälgi 'breast, udder'] [Mat. 338].

{**mänʌ} 'man': IE *m/o/nu- 'man'; ?Ural. *m/ä/ńće 'man'; Drav. *maṉ 'master'; AA *mn 'man'.
[Cf. #292 **mänʌ 'man, male'] [Mat. 349].

**mänʌ 'stand, remain in place': IE *men- 'stand in place, remain'; Alt. *m/ä/nä- 'stand, live in one place'; Drav. *manṉ- 'stand, exist'; AA *ʔmn 'firm, constant'.
[Cf. #287 **mAnʌ 'remain in place, stand firmly'] [Mat. 367].

**mäńʌ 'crumple, knead': IE *men- 'knead, crumple, trample'; Ural. *mäńʌ- 'knead, squeeze'.
[Mat. 350].

**m/ä/rʌ 'be sick': IE *mer- 'die'; Ural. *m/ä/rʌ- 'be sick'; AA *mr- 'sick'.
[Cf. #293 **m/ä/rʌ 'be sick, die'] [Mat. 331].

**mätʌ 'sense, feel': IE *med- 'think over, measure'; Alt. *m/ä/dä- 'feel, know'; Drav. *maṯṯ- 'measure'; ?AA *?md 'understand, speak', *mdd 'measure'.
[Cf. #297 **metA 'feel, sense, realize'] [Mat. 353].

**mentʌ 'miss': IE *mend- 'mistake, fault'; Ural. *mentä- 'miss, be mistaken'.
[Cf. #357 ?**menʌ 'miss, go by; be in vain, futile; be reckless; be false'; #358 ?**munE 'deficiency, fault, deformity'] [Mat. 357].

?**milʌ 'pray': IE *meldh- 'pray'; Alt. *myla- 'sanctify, bless'.
[Mat. 348].

**mińʌ '(younger) female relative by marriage': ?Alt. *menʌ/*benʌ 'son's wife, wife's younger sister'; Ural. *miń̈ä 'son's wife, wife's younger sister, younger brother's wife'; ?Drav. *miṇṭʌ 'wanton woman'; AA *m(j)n 'wife, woman'.
[Cf. #301 **miń̈ä 'woman, female relative'] [Mat. 363].

**m/o/ç(k)ʌ 'wash': IE *mezg- 'wash, dive'; Ural. *moś̈ke-/*muś̈ke- 'wash'; Drav. *mac- 'wash, rub head with clay'; AA *m(w)ṣ 'wash, rub'.
[Cf. #304 **muçʌ 'wash'] [Mat. 349].

**molʌ 'grind': IE *mel(H)- 'grind'; Ural. *molʌ- 'crumble, break up'; AA *ml- 'grind'.
[Cf. #302 **moLʌ 'crush, smash'] [Mat. 359].

**m/o/nʌ, *m/o/n/g/ʌ 'much, many': IE *men-, *men(e)gh- 'many'; Alt. *maŋa 'big, strong', ?*m/a/n(ʌ) 'big, quantity'; Ural. *mone 'many'; AA *mnʕ 'big, powerful'.
[Mat. 348].

**mu/ǰ/ʌ '(body) defect': Ural. *muǰʌ 'body defect, sickness'; Drav. *mucʌ 'sick, spoiled'.
[Cf. #305 **muČʌ 'spoiling, deficiency'] [Mat. 350].

**mu(n)ķʌ 'labor, work': IE *menk- 'heavy labor, torment, deficiency'; Alt. *muŋ 'labor, torment', *muk- 'torment oneself, difficult'; Drav. *mukk- 'strain oneself (re: woman in labor)'; ?Kart. *ma(n)ķʌ- 'heavy, pregnant'.
[Cf. #308 **mu(n)ĶʌA 'heavy, difficult'] [Mat. 369].

**muñ(d)ʌ 'egg': ?IE *mon/d/o- 'testicle'; Ural. *muña 'egg, testicle'; Drav. *mu(ṇ)ṭai 'egg'.
[Cf. #307 ?**muña 'egg'] [Mat. 373].

**murʌ 'grind': IE *mer- 'grind, pulverize'; ?Alt. *mur(ʌ)- 'friable, brittle'; Ural. *murʌ- 'pulverize, beat, break'; Drav. *muṟʌ-/*murʌ- 'break up'; AA *m(w)r 'grind, cut up'.
[Cf. #310 **murʌ 'break, crush'] [Mat. 359].

**murʌ (descriptive) 'shout': Ural. *mura- 'shout, sing'; Drav. *murʌ-/*muṟʌ- 'sound, to shout'.
[Mat. 345].

**mutʌ 'end': Alt. *muda- 'end'; Drav. *mūṭ-/*muṭʌ- 'end'; AA *mwt 'to die'.
[Cf. #306 **muda 'end'] [Mat. 344].

**mʌṭʌ 'worm': IE *m/o/t-; Kart. *maṭl-.
[Cf. #312 ?**mʌṭʌ 'worm'] [Mat. 372].

**mʌwʌ 'water': IE *meu(H)- 'moist, damp'; Alt. *mə̄ 'water'; AA *mw 'water'.
[Cf. #298 **mEwʌ 'water, moisture'] [Mat. 334].

**nahrʌ 'day': Alt. nara- 'day, sun'; AA *nhr 'day, daylight'.
[Mat. 339].

**najrʌ 'man': IE *ner- 'man'; Alt. *niāra- 'man, person'.
[Cf. #331 **NajRʌ 'man, male'] [Mat. 331].

**natʌ 'female relative': ?Alt. *ńatʌ 'relative'; Ural. *natʌ 'female relative'; Drav. *nāt(t)ʌ 'brother's wife, husband's sister'; ?AA *?nṯ 'woman'.
[Cf. #315 **nat/o/ 'female relation by marriage'] [Mat. 361].

**n/äķ/ʌ 'chase (enemy)' ?IE *Henḱ-/*Hneḱ- 'chase, kill'; Alt. *n/ä/kä- 'chase, battle'; AA *nķ- 'revenge, kill'.
[Mat. 357].

**neqrʌ 'front (of head)': Ural. *nēre 'front, nose'; Drav. *neṟṟʌ 'forehead, front'; AA *nẖr 'nose, forehead'.
[Cf. #316 **ne/rH/i 'front of head, forehead'] [Mat. 354].

**nimʌ 'name': IE *nem-/*nōm-n̥ 'name'; Ural. *nime 'name'; AA *nb- 'name'.
[Cf. #317 **nimi 'name'] [Mat. 343].

**nu 'now': IE *nŭ; Ural. *nüke.
[Cf. #335 **Nüqʌ 'now'] [Mat. 368].

**nurʌ 'penetrate': IE *ner- 'penetrate, dive'; Drav. *nuṟʌ- 'crawl into, penetrate'.
[Mat. 357].

**/n/ʌgʌ 'pierce': IE *neǵh- 'pierce, plunge into'; AA *ngš 'butt'.
[Cf. #334 **NEgʌ 'pierce'] [Mat. 335].

?**ńan/g/ʌ 'tongue': IE *dn̥ǵhū/*jn̥ǵhū; Ural. *ńaŋkćem; ?Kart. *(n)ina.
[Mat. 373].

**ńäčʌ 'damp, moist': Ural. *ńäčä 'damp, moist'; AA *nṯẖ 'moisture, irrigate'.
[Cf. #323 ?**ńäʔʌ 'moist, damp'] [Mat. 333].

**ńämʌ 'soft': Alt. *ń/ä/m(ʌ) 'soft, fine'; Ural. *ńämʌk 'soft'.
[Cf. #321 **ńämʌ (descriptive) 'soft'] [Mat. 350].

**ńäwä 'hair': Ural. *ńäwʌ; Drav. *navʌ-.
[Cf. #322 ?**ńä/wH/a 'hair'] [Mat. 334].

?{**ńida} 'tie together': IE *nedh-; Ural. *ńyðа-.
[Cf. #324 **ńida 'tie together'] [Mat. 364].

**ńi(h)rʌ 'flow': ?Ural. */ń/yra 'stream'; Drav. *ñīr 'water, fluid'; AA *nhr 'flow, river'.
[Mat. 369].

**ńilʌ 'mucus' (Cf. **ńo/H/lʌ): Alt. *ńyla 'slippery mucus, slime'; Ural. *ńyla 'slimy layer under bark'.
[Cf. #325 **ńila 'slippery and moist' (re: inner layer of bark, skin, peel)] [Mat. 365].

**ń/o/ɣrʌ 'young': IE *i̯eH´r- 'young animal, spring'; Alt. *ńārʌ 'young, young animal, spring'; Ural. *ńōre 'young, newborn animal, new'; Drav. *ñār- 'young plant, to germinate, sprout'; ?Kart. *noɣr- 'new grass'; AA *nʕr 'youth'.
[Cf. #318 **ńaʕrʌ 'young, newborn'] [Mat. 349].

**ńo/H/lʌ 'mucus': IE *i̯eHl- 'raw, unripe, untreated'; Alt. *ńal´(a)- 'tears, snot; moist, raw, untreated'; Ural. *ńolke 'mucus, saliva, snot', ?*ńōle- 'lick'; Drav. *ñōɻʌ 'saliva, mucus'.
[Mat. 365].

**ńomʌ 'hold': IE *i̯em- 'hold firmly, bridle'; ?Alt. */ń/omʌ-/*/ń/umʌ- 'to squeeze, hold back, restrain'; Ural. *ńoma- 'hold, seize'; Drav. *ñ/a/mʌ- 'squeeze'.
[Cf. #319 **ńamʌ 'squeeze, seize'] [Mat. 339].

**ńorʌ 'damp, moist': Alt. */ń/or(ʌ) 'soak, damp, moist'; Ural. *ńorʌ 'damp, moist'.
[Cf. #326 **ńohrʌ 'moist, damp; to flow'] [Mat. 333].

**ńowdʌ 'move': IE 'i̯eudh- 'be in rapid motion, to battle'; Ural. *ńowðа- 'pursue'; AA *nwd 'be in motion'.
[Cf. #327 **ńowda 'move rapidly'] [Mat. 338-9].

**ńukʌ 'pull about, annoy': IE *i̯euǵ- 'be upset, to battle'; Ural. *ńükʌ- 'pull about, pester'; Drav. *nukʌ- 'shake'.
[Cf. #328 ?**ńükʌ 'to shake, pull about'] [Mat. 369].

**ńulʌ 'shed': Alt. *ńülʌ- 'shed'; Ural. *ńülke- 'shed, to moult'.
[Cf. #329 **ńülʌ 'tear off'] [Mat. 347].

**ńurʌ 'burn': Alt. *ńörä- 'burn, incandesce'; ?Drav. *ñerʌ- 'blaze'; AA *nwr 'shine, glow'.
[Cf. #320 **ńara 'fire, to blaze'] [Mat. 337].

**ñejʌ 'nit' (with irregular fonetic development): IE *knid-/
*ghneid(h)- 'nit'; Alt. *n/e/j- 'louse'; Ural. *ñīwᵩ(ek)
'nit, larva'.
[Mat. 336].

?**ñigʌ 'bow': IE *kneigˣh-; Ural. */ñ/iɣe-.
[Cf. #359 **ñajgu 'bow, bend, hang'] [Mat. 350].

**ñiḳʌ 'vertebra': IE *knek- 'nape of neck, neck'; Alt. *nykʌ 'neck
vertebrae, neck'; Ural. *ñyk(k)ʌ 'vertebra, joint; nape of
neck'; ?Kart. *neḳw- 'bend'.
[Cf. #330 **ñiḲa 'vertebra of neck, neck'] [Mat. 355].

{**NEHU} 'deceased': IE *neHu- 'spirit of deceased, death'; ?Alt.
*/ᵩ/iaby 'spirit of deceased'; Drav. *ñev(v)- 'grieve'; AA
*nwḫ- 'lament the deceased'.
[Mat. 355].

**pa/ḳ/ʌ (descriptive) 'burst': Alt. *pak(ʌ)- 'burst, to wrinkle';
Ural. *pakkʌ- 'burst'; Drav. *pakk-/*pakʌ- 'break, burst'; AA
*pḳ-/*bḳ- 'split, splinter'.
[Mat. 347].

**p/a/l´(q)ʌ 'foot': Alt. *pal´ga/*bal´- 'foot, hoof, leg'; ?Ural.
*pel´ka 'leg, hoof'; Kart. *perq-/*berq- 'leg, trace'.
[Cf. #361 **pal´qʌ 'foot'] [Mat. 368].

{**pa(n)ǰʌ} 'open': Alt. *paǰ(ʌ)-; Ural. *pa(n)ǰʌ-.
[Mat. 353].

{**p/a/r/ä/} '(finger-, toe-)nail': ?IE *pᵨsto- 'finger'; Alt.
*p/e/rä- 'finger'; Kart. *pᵨcxʌ- 'nail, claw'; AA *prḏ/*ḏrp
'nail, finger'.
[Cf. #362 **p/a/r/ä/ '(finger-, toe-)nail'] [Mat. 351].

{**p/a/rʌ} 'bee': Alt. *pāry; Ural. *pora/*pāre 'gadfly'.
[Mat. 358].

**päɬʌ 'half': IE *pol- 'half, side'; Ural. *päɬä/*pēɬe/*pōɬe 'half';
Drav. *pāl 'part, section'.
[Mat. 356].

?**p/eḳ/ʌ 'cattle': IE *peḱu; Alt. *pökär.
[Cf. #375 **ᵩokwe 'cattle'] [Mat. 365].

**pelʌ 'fear': IE *pel- 'shake, be afraid'; ?Alt. p/e/l(ʌ)- 'not
dare'; Ural. *pele- 'be afraid'; AA *pl-/*bl- 'be afraid'.
[Cf. #337 **pelHi 'shake, be afraid'] [Mat. 331].

{**perC/Sʌ} 'rear': IE *pers-nā, *pers-ni- 'heel, thigh, hip'; Ural.
*per/s/ʌ 'rear, back'; Kart. *brǰ-al- 'heel'.
[Mat. 342].

**/p/erʌ 'skin': Ural. *pere 'skin, inner layer of skin, bark'; Drav. *perʌ '(snake) skin'.
[Cf. #364 **per/e/ 'bark, skin, peel, scales'] [Mat. 344].

**pišʌ 'prepare (food)': Alt. *biš̆(ʌ)-/*pi/šʌ/- 'boil, cook, turn sour, ripen'; Ural. *pišä- 'fry'; AA *p(1)š̆-/*bš̆- 'boil, cook, prepare, ripe'.
[Mat. 338].

**/p/itʌ 'hold': Ural. *pitä- 'hold'; Drav. *piṭʌ- 'hold, seize'.
[Mat. 339].

**p/u/lʌ 'swamp': IE *bŏl- 'swamp, pond'; Alt. *bölä 'swamp'; ?AA *bl- 'moist, damp'.
[Cf. #336 ?**palʌ 'swamp'] [Mat. 331].

{**/p/u/ñ/a} 'hair': Alt. *püńä- 'wool, fluffy animal'; Ural. *puna 'hair'.
[Cf. #366 **/p/u/ñ/a 'hair, wool, feathers'] [Mat. 335].

**pur9ʌ 'flea': Alt. *bürgä; AA *brg/*prg.
[Cf. #338 ?**puṟčʌ(9ʌ)/ **pülčʌ(9ʌ) 'flea'] [Mat. 331].

{**pʌrçʌ} (descriptive) 'tear': Kart. *prç-/*brç- 'tear'; AA *prg/*prd 'tear, break'.
[Cf. #339 (descriptive) **pär´/a/ 'tear, break, chop']
[Mat. 360].

**paj/n/ʌ 'squeeze': Alt. *pańʌ- 'join together tightly, close'; Ural. *paj/n/a- 'squeeze, press'.
[Mat. 364].

**palʌ 'many, much': IE *p₀lu 'many', *pleH´- 'more'; Alt. *pölä-/*pülä- 'surplus, superfluous'; Ural. *paljʌ 'many, thick'; Drav. *palʌ 'many'; ?Kart. *pr- 'many, more'; ?AA *pl- 'very'.
[Mat. 348].

**pal/9/ʌ 'settlement': IE *pl̥H- 'fortified settlement'; Alt. *palga 'settlement, fenced-in area, enclosure'; Ural. *palɣʌ 'settlement'; Drav. *pal̥l̥ʌ 'settlement'.
[Cf. #368 **pal9ʌ 'fortified settlement'] [Mat. 356].

**/p/alʌ 'tooth': Alt. *palʌ 'molar'; Drav. *pal 'tooth'.
[Cf. #370 **/p/alʌ 'tooth'] [Mat. 343].

**pal´ʌ- 'burn': IE *pelH-/*pleH- 'burn', ?*(s)p(h)el- 'shine'; Ural. *pal´a- 'burn'; Drav. *pal̥ʌ- 'sparkle'.
[Mat. 337].

**panʌ 'put, lay': Ural. *pane- 'put, lay'; ?Kart. *pan- 'stand, to lean smthg. against'; AA *pn- 'put, lay'.
[Mat. 344].

**pa/rj/ʌ 'spread, diffuse': IE *(s)p(h)er- 'spread, strew, spray'; Drav. *parʌ-/*paṟʌ- 'spread, diffuse, strew'.
[Mat. 359].

**ƥarʌ (descriptive) 'fly': IE *(s)per- 'fly, wing', *(s)per(g)- 'name of bird'; ?Alt. *pār- 'soar, hover'; ?Ural. *p/a/rʌ- 'fly'; Drav. *parʌ-/*paṛʌ- 'fly, run, jump'; Kart. *ƥer-/ *ƥar-, *pr-in- 'fly'; AA *pr- 'fly, run, jump'. [Mat. 346].

**ƥa/ś/ʌ 'penis': IE *pes-; Ural. *p/a/śe. [Cf. #371 **ƥ/a/se 'penis'] [Mat. 372].

**ƥatʌ 'foot': IE *ped- 'foot, leg'; Alt. *padak 'foot, leg'; Drav. *paṭʌ 'foot, step'. [Mat. 368].

**ƥatʌ '(clay) vessel': IE *ped- 'vessel, pot'; Ural. *pata 'pot'; Drav. *patalʌ 'pot'. [Mat. 366].

**ƥaṭʌ 'wide': IE *pet(H)- 'wide, spread out'; Alt. *pata- 'field'; ?Drav. *pāt(t)ʌ 'plot of land'; AA *pṭ-/*pt- 'wide, open'. [Mat. 372].

**ƥä/ķ/ʌ 'hot': IE *pekʷ- 'fry, boil'; Alt. *p/ä/kü 'hot'; Ural. *päkkʌ 'hot'. [Mat. 337-8].

**ƥedʌ 'pierce': IE *bhedh-/*ƀedh- (prob. < *pedh-) 'pierce, stick into, dig'; Ural. *peδe- 'pierce'; Drav. *peṭṭ- 'stick into, insert'; AA *p(1)d-/*bd- 'opening, chop, divide'. [Mat. 357].

ƥe/H/jʌ 'be sick': IE *peHi- 'be sick'; Alt. *pöjä 'wound, sore'. [Cf. #342 ?P/ä/Hja 'pain'] [Mat. 331].

**ƥenʌ 'dog': Ural. *penʌ 'dog'; Drav. *peṇ 'female (of species)'; Kart. *pin- 'dog'. [Mat. 366].

**ƥerʌ 'give birth to': IE *per- 'give birth'; Alt. *pörʌ 'descendants'; Ural. *perʌ- 'family, relatives'; AA *pr- 'descendants, child, fruit'. [Mat. 361].

**ƥerʌ 'edge': IE *per- 'front, front edge, before, across'; Alt. *p/e/rä 'lower edge, bottom'; Ural. *perä 'edge, extremity'; Drav. *piṛ 'rear edge, rear side'; Kart. *pir- 'edge'; AA *prʕ 'edge, extremity'. [Mat. 345].

**ƥiγwʌ 'fire': IE *peHu̯- 'fire'; ?Alt. *p/eb/ʌ- 'hot, to dry'; Ural. *pīwe 'hot, warm'; Kart. *px(w)- 'warm'; AA *pʕw 'fire'. [Mat. 352].

**ƥi/H/ńʌ 'graze, to shepherd': IE *peHʸi-; Ural. *pȳńa-. [Cf. #373 **/ƥ/eHńa 'graze, shepherd, defend, be concerned about'] [Mat. 354].

**ƿi/H/ʌ 'point, (cutting) edge': IE *(s)peHi̯- 'sharp point'; Alt. *pӯ- 'sharpen'; Ural. *pӯ/ɣ/ʌ 'flint, (sharp) stone'; Kart. *ƿxa 'point, bone, cartilage'.
[Mat. 352-3].

**ƿilʌ 'wide': pelH- 'wide and flat, spread out'; Alt. *pilä- 'plain, open terrain'.
[Mat. 372].

**ƿil´ʌ 'split, splinter': IE *(s)p(h)el- 'split, splinter, burst'; Ural. *pil´ʌ 'break up'; Drav. *pi̯l- 'split, splinter, burst'; AA *pl- 'split, splinter, burst'.
[Mat. 360].

**ƿir(ķ)ʌ 'ask, request': IE *perḱ-/*preḱ- 'ask, request'; Alt. *pirʌ- 'ask, appeal to a divine being'.
[Cf. #374 **ƿirkʌ 'ask, request'] [Mat. 357].

**ƿojʌ 'child, baby': Alt. *pö-/*pi-; Ural. *pojka 'son'.
[Mat. 360].

**ƿo/ķ/ʌ (descriptive) 'bubble': Alt. *poka; Drav. *pokk-/*pokʌ.
[Mat. 358].

**ƿučʌ 'down, fluff': IE *pous- 'down, body hair'; Ural. *puča 'down, feathers'; Kart. *paČw- 'body hair'.
[Cf. #365 **/p/unčE 'body hair'] [Mat. 358].

**ƿu/č/ʌ 'fall': Alt. *puča- 'fall, jump, fly'; Ural. *pučʌ- 'fall'.
[Mat. 353].

**ƿuɣʌ (descriptive) 'blow': IE *pu(H)- 'blow, swell'; ?Alt. *pō- 'blow'; Ural. *pū/ɣ/a- 'blow'; ?Kart. *pūl 'puff of wind'; AA *ƿw/ʕ/ 'breathe, blow'.
[Mat. 339].

**ƿu(H)jʌ 'boil, seethe': IE *speHi̯- 'ripen, to manage in time'; Alt. *püjʌ-/*pöjʌ- 'boil'; Ural. *püjʌ- 'boil, ripen'; Kart. *pu- 'boil, rise (re: dough)'.
[Mat. 343-4].

**ƿulʌ 'poplar': IE *pel- 'poplar'; Alt. *pula 'poplar, ash'.
[Mat. 369].

**ƿu/nj/ʌ 'weave': IE *spen- 'weave, spin, draw tight'; Ural. *puna- 'weave, twist, spin', *puńa- 'twist, entangle'; Drav. *puŋʌ- 'tie'; AA *pn- 'rotate, weave'.
[Mat. 354].

**ƿur(j)ʌ 'grind': IE *(s)p(h)er- 'tear up, grind, scutch'; Alt. *pür´ʌ- 'tear up, grind, wear out'; ?Ural. *pure- 'chew, bite'.
[Mat. 359].

**p̆uš̆ʌ (descriptive) 'blow': IE *peus- 'blow, swell'; Alt. *pusʌ- 'blow'; Ural. *puš̆ʌ- 'blow'.
[Mat. 339].

**p̆u/ṭ/ʌ 'hole': Alt. *pütʌ 'hole, vulva'; ?Ural. *putʌ 'rectum'; Kart. *puṭ- 'hole'; ?AA *pwt 'hole, anus, vulva'.
[Mat. 340].

{**p̆ʌHu} (descriptive) 'chop': IE *peHu̯- 'cut, beat'; ?Alt. *pū- 'saw'; Kart. *pu- 'chop, cut'.
[Mat. 362].

**p̆ʌrʌ 'beat': IE *per-, *perg- 'beat, cut'; Kart. *pir- 'sharpen a scythe'; ?AA *pr- 'cut, break apart, smash'.
[Mat 330].

?{**PäC/Sʌ} 'widen': Ural. *päč̆e- 'move apart, widen, untie'; Kart. *pec(1)- 'open, expose'; AA *pś- 'spread out'.
[Mat. 360].

{**PiSʌ} 'glue': Ural. *p/i/šk/ä/ 'sticky liquid, resin, tar'; Drav. *picʌ 'sticky'.
[Mat. 344].

{**Pu(n)dʌ} 'scrotum': Ural. *pu(n)ʤʌ; Drav. *puṭṭai.
[Mat. 349].

{**p̆isʌ} (descriptive) 'splash': Alt. *pisʌ-/*püsʌ- 'splash, pour'; Ural. *piśʌ- 'drizzle, drip'; Kart. *ps- 'urinate'.
[Cf. #340 **p̆isʌ 'splash'] [Mat. 332].

**qalʌ 'lower (adj)': ?IE *Hel- 'bend at knees, genuflect; deep'; Alt. *ala 'bottom'; Ural. *ala 'bottom'; AA *ẖl- 'lower'.
[Mat. 351].

**qanṭʌ 'front': IE *Hent- 'front side'; Alt. *antʌ 'front, south side'; AA *ẖn/ṭ/ 'front, south side; nose'.
[Mat. 354].

**qapʌ (descriptive) 'seize': IE *Hep- 'seize, take'; Alt. *abu-/*apu- 'seize, take'; Kart. *qʌp- 'bite'; AA *ẖpʕ 'seize'.
[Mat. 371].

**q/a/ṭʌ 'go': IE *Het- 'go, year'; AA *ẖṭj 'step'.
[Mat. 343].

**qawʌ 'defend': IE *Heu- 'help, defend'; Alt. *abʌ- 'defend, save, help'; AA *ẖw- 'defend'.
[Mat. 342].

**qelʌ 'arm, hand': Alt. *el(ʌ) 'arm, hand; lead by rein'; Kart. *qel-/*qal- 'hand, arm'.
[Mat. 362].

**q/o/dʌ 'move': Alt. *odʌ- 'move'; Drav. *āṭṭ-/*āṭʌ 'move'; Kart. *qad-/*qed- 'move'; AA. *ẖd- 'move quickly, to ride'.
[Mat. 338].

**qowʌ 'hole, opening': Ural. *owe 'door'; ?Drav. *āvʌ- 'gape, yawn'; AA *ẖw(ẖ) 'hole, opening, door'.
[Cf. #377 qowe 'hole, opening'] [Mat. 353].

**qurʌ 'pierce': Alt. *ur/*or 'hole, opening'; Drav. *urʌ- 'pierce'; Kart. *qwr- 'make hole(s) in'; AA *ẖ(w)r 'pierce, hole'.
[Mat. 357].

?{**qʌlčʌ} (descriptive) 'tear': Kart. *qleč- 'tear up'; AA *ẖlṣ 'tear out'.
[Mat. 360].

**qarʌ 'smell (intr.)': IE *kerm-/*krem- 'strong smelling plant'; Kart. *qar- 'stink'; AA *ḳr- 'smell'.
[Mat. 354].

**qim/H/ʌ 'exert oneself, become tense': IE *ḱemH- 'work intensely, tire'; Alt. */kᶜ/ȳma 'zeal; heat'; Ural. *kȳma 'heat (re: animals), ardour; heat'; Kart. *qm- 'hunger, thirst'; ?AA *ḳm/H/ 'exhaust, burn'.
[Mat. 350].

**qi/ń/ʌ 'cold': ?Alt. *kᶜiŋü- 'cold'; ?Ural. *k/y/ńʌ 'frost'; Drav. *ki/ŋ/ʌ- 'cold'; Kart. *qin- 'freeze'.
[Mat. 371].

**q/iw/lʌ 'hear': IE *ḱleu- 'hear'; Alt. *kᶜ/ul- 'ear'; Ural. *kūle 'hear'; Drav. *kēḷ- 'hear'; Kart. *qur- 'ear'; AA *ḳʸl 'hear'.
[Mat. 366].

**qo(H)lʌ 'kill': IE *gʷe(H)l- 'torment, die'; Ural. *kōle- 'die'; Drav. *kol- 'kill'; Kart. *qwil- 'kill'.
[Mat. 370].

**qol´ʌ 'testicle': Ural. *kŏ̄le; Kart. *qwer-; AA *ḳʸl.
[Mat. 373].

**/q/opʌ 'bark': Alt. */kᶜ/ob(ʌ) 'bark, fleece bark'; Ural. *kopa 'bark, skin'; ?Kart. *ṭqab-/*ṭqaw- 'skin, hide'.
[Mat. 344].

**qulʌ (descriptive) 'shout': Kart. *qwir-/*qw(i)l- 'shout'; AA *ḳwl 'shout, speak'.
[Mat. 345].

**qurʌ 'love': Drav. *kūr-; Kart. *qwar.
[Cf. #378 **qurE 'love'] [Mat. 347].

**qʌl´ʌ 'penis': Ural. *kol´ʌ; Kart. *qle.
[Mat. 372].

**ra/ḳ/ʌ 'build': IE *rek- 'arrange, determine, assume'; Ural. *rakkʌ- 'build, to arm'; AA *r/ḳ/- 'build, prepare'. [Mat. 368].

**rowʌ 'dig': IE *reuH- 'dig, tear, smash'; Ural. *rowa- 'cut, chop, gouge out'. [Mat. 362].

**ru/ć/ʌ 'destroy': IE *reus- 'destroy, break'; Ural. *rućʌ- 'destroy, crush'; ?AA *rw/ś/ 'destroy'. [Mat. 358].

**r/u/ɣ̣ʌ 'run': IE *reus- 'move quickly'; AA *rwt̲ 'run'. [Mat. 330].

?**rʌgʌ 'move': IE *ergh- 'shake, dance'; AA *rg- 'restless, move'. [Mat. 339].

**rʌ(h)bʌ 'worry': IE *r/a/bh- 'anger, grief'; AA *rhb 'worry'. [Mat. 334].

**rʌkʌ 'horn': ro/g/o-; Kart. *rka. [Mat. 361].

**rʌwḫʌ 'wide': IE *reuH- 'wide, expansive'; AA *rwḫ 'wide, expansive'. [Mat. 373].

{**rʌḫʌ} 'wash': Kart. *re(1)x-/*rc(1)x-; AA *rḫd̲. [Mat. 349].

**sagʌ 'receive': IE *seǵh- 'hold, receive'; Alt. *sagʌ- 'extract, to milk'; Ural. *sāγe- 'receive'. [Mat. 356].

**sanʌ 'think': Alt. *sana- 'think'; Ural. *sana- 'think, speak'; ?AA */š/n 'speak'. [Mat. 339].

**säjʌ 'puss': Alt. *sī 'bile, gall'; Ural. *säje 'puss'. [Mat. 336].

**/sä/mʌ 'smear (w/fat)': IE *smeH´-, *smei- 'smear'; Alt. *s/ä/mʌ- 'fat'; ?Kart. *cm- 'smear w/fat'; AA *šm- 'fat, smear'. [Mat. 348].

?{**si??} 'sun': IE *seHu-; Alt. *sibʌ-. [Mat. 366].

**silʌ 'slippery': IE *(s)lei-, *sleig-, *sleidh- 'slippery, smooth'; Alt. *sil(ʌ)- 'rub, make smooth'; Ural. *silʌ- 'smooth'. [Mat. 365].

**/s/ipʌ 'drizzle': IE *seip-/*seib- 'drizzle, strain, sift'; Alt. *sipʌ-/*sibʌ- 'drizzle, strain, sift'; AA *šp(1)- 'pour, sprinkle'.
[Mat. 349].

**/s/irʌ 'sinew': IE *ser- 'thread, to thread'; Alt. *sirä- 'sinew, thread, sew'; Ural. *särʌ- 'sinew, root'; Drav. *cir- 'root'; AA *šr- 'sinew, root'.
[Mat. 341].

**son/H/ʌ 'sinew': IE *sneH´-, *sneH´u̯- 'thread, sinew, to twist'; Alt. *sūnʌ- 'stretch, extend'; Ural. *sōne 'sinew'.
[Mat. 341].

**sonkʌ 'penetrate': IE *sengʷ- 'drown, fall'; Alt. *suŋʌ- 'dive, drown'; Ural. *soŋa-/*saŋʌ- 'penetrate, dive, enter'; Drav. *cōṅk- 'enter'. [Mat. 357].

**sulʌ 'moist, damp': IE *sulā 'juice, a drink'; Alt. *sula 'damp, moist'; Ural. *sula- 'melt, melted'; Kart. *s(1)wel- 'wet, moisten'; ?AA */š/wl 'damp, moist, irrigate'.
[Mat. 333].

**/s/ulʌ 'unattached, loose': ?IE *(s)leu- 'hang freely, unattached, loose'; Alt. *sula 'unattached, loose'; ?Drav. *cuḷʌ 'light'; AA *šwl 'hang freely'.
[Mat. 351].

**/s/undʌ 'become dry': IE *(s)u̯endh- 'dry out, disappear'; Drav. *cuṇṭ- 'become dry, evaporate'.
[Mat. 367].

**sun(g)ʌ 'odor': Ural. *suŋʌ 'odor'; Kart. *s(1)un- 'odor'; AA */š/n- 'to sniff, smell, nose'.
[Mat. 342].

**/s/up̥ʌ 'sweep': IE *su̯ep-/*seup- 'sweep, strew': Alt. *süpʌ- 'sweep'; ?Drav. *c/ē/ppʌ- 'sweep'.
[Mat. 348].

{**sUra} 'speak, talk': IE *s(u̯)er- 'converse'; Alt. *sū̆ra-/*sōra- 'ask'.
[Mat. 337].

**sʌwʌ 'liquid': IE *seu(H)- 'liquid, pour'; Alt. *sub(ʌ) 'water'; Kart. *s(1)w- 'drink'; AA */š/w- 'drink'.
[Mat. 341].

**śa/č/ʌ 'strew, scatter': Alt. *sačʌ- 'strew, scatter, spill'; Ural. *śača- 'splash, strew, scatter'.
[Mat. 368].

**/ś/ajrʌ 'nit': Alt. *sirkä; Ural. *śa(j)rkʌ/*śajwar; Drav. *cīr; ?Kart. *çil-.
[Mat. 336].

{**śaḵʌ} 'sap': IE *s(u)ekʷo- 'sap, resin'; Alt. *sakʌ-/*sagʌ- 'juice, resin, to ooze'; AA *š(w)ḵ 'drink'.
[Mat. 366].

**śalʌ 'willow': IE *sal(i)k- 'willow'; Ural. *śalʌ 'brittle willow, elm'.
[Mat. 343].

**śarnʌ 'incantation, spell': Alt. *sarnʌ 'incantation, poetry'; Ural. *šarna 'incantation, tale'.
[Mat. 342].

**śel(k)ʌ 'unattached, loose': IE *selǵ- 'let go; weak'; Alt. *s/e/l′i- 'unattached, loose, tied weakly, untie'; Ural. *śelke- 'hold weakly'; ?Drav. *call- 'weaken'.
[Mat. 350].

**śem/H/ʌ 'swallow': ?IE *semH- 'scoop, ladle'; Alt. *simä- 'swallow, suck'; Ural. *śēmʌ- 'swallow, drink'.
[Mat. 335].

**śidʌ 'tie together': Alt. *sidä 'tie, tack together'; Ural. *śyð′a- 'tie'.
[Mat. 364].

**śi/H/ʌ 'tie together': IE *seH′i-/*sH′ei- 'tie, bind', *sH′ieu- 'sew'; Ural. *ś/i/γʌ- 'weave'.
[Mat. 364].

**śiwʌ 'smear (w/clay)': Alt. *syba- 'coat with clay'; Ural. *ś/y/wa-/*śawe 'clay'; Kart. *sw- 'smear'.
[Mat. 348].

**śojʌ (descriptive) 'sound, ring)': IE *suei- 'to whistle, sound'; Ural. *śojʌ- 'sound, ring'.
[Mat. 342].

**śo/λH/ʌ 'become separated (from herd)': Alt. *salu- 'become separated'; Ural. *śōð′a- 'become separated from herd during mating season'; Drav. *cōṯʌ- 'run away'.
[Mat. 353].

**/ś/otʌ 'curse': Ural. *śota-/*śatʌ- 'curse, swear; war'; Drav. *caṯʌ 'swear, frighten'.
[Mat. 357].

**śulʌ 'mucus': IE *(s)leuḱ-, *(s)leuǵ-, *sleub- 'slippery'; Alt. *sülä-/*silä- 'saliva, mucus'; Ural. *śulke 'saliva, to spit'; Drav. *coḻḻ- 'mucus, saliva'; Kart. *slek-/*sḻk- 'lick, smooth'; ?AA */š/l- 'saliva'.
[Mat. 365].

**śʌlʌ 'intestine': Alt. *sylʌ-; Ural. *śola/*śōle.
[Mat. 344].

**śuλʌ 'pieces of coal': IE *su̯el- 'smoulder, burn'; Ural. *śuδ́e 'coal'; Drav. *cuṭʌ- 'burn'.
[Mat. 370].

**śʌmʌ 'hear': Kart. *sem-/*sm-; AA *šm-.
[Mat. 366].

**šarʌ 'flow': IE *ser- 'flow'; ?Alt. *sār´ 'swamp'; Ural. *š/a/rʌ- 'flood, lake'; Drav. *cāṟ- 'juice, soup'.
[Mat. 369].

**šerʌ 'be awake, alert': IE *ser- 'guard'; Alt. *ser´ä- 'be awake, be concerned about'; Ural. *šerʌ- 'be awake, alert'.
[Cf. #348 **šehr´a 'be awake, alert'] [Mat. 331].

**š/e/wʌ 'give birth to': IE *seu(H)- 'give birth'; ?Ural. */še/wʌ- 'descendants'; Kart. *šw- 'give birth'.
[Mat. 361].

**šingʌ 'snow': IE *sneigʷh- 'snow'; Alt. *siŋʌ/*seŋ/*söŋ 'hoarfrost, snow, ice crust'; ?Ural. *šüŋe 'ice'.
[Mat. 366].

**širwʌ 'become dry': Alt. *sir- 'become dry, dryness'; Ural. *š/y/rwa 'become dry'; Kart. *š(w)er-/*š(w)r- 'dry'; ?AA *śr- '(to) dry'.
[Mat. 366-7].

**š/u/dʌ 'violence': Kart. *šwd- 'strangle, drown'; AA *š(w)d- 'apply force'.
[Mat. 350].

**šupʌ 'thin, fine': Alt. *suba- 'stretched, oblong'; Ural. *šupa 'thin'. [Mat. 369].

**šu/š́/ʌ 'become dry': IE *saus-/*sus- 'dry'; Ural. */š/ušʌ- 'become dry'; Kart. *šuš- 'become dry'.
[Mat. 367].

**šuwʌ 'good': IE *sŭ- 'good'; Ural. *šüwä 'good'; Kart. *šu- 'befit, decorate'; AA *šw- 'fitting, appropriate'.
[Mat. 371].

**šʌwʌ 'allow, let': IE *seuH-; Kart. *šw-.
[Mat. 358].

{**Sänḳʌ} 'shoulder': Ural. *säŋkʌ- 'shoulder, upperarm'; AA *šmḳ/*šḳm 'shoulders, shoulder blades'.
[Mat. 355].

{**Sokʌ} 'blind': Alt. *sokʌ-; Ural. */s/ok(k)a-.
[Mat. 365].

{**Sujʌ} 'bend': IE *su̯ĕi-; Ural. */śujʌ-.
[Mat. 336].

{**Sunk̨ʌ} 'heavy': IE *suenk-; Ural. *ś/u/ŋkʌ-.
[Mat. 370].

?{**SUTʌ} 'beat': Ural. s/ŏ/ttʌ- 'beat'; Drav. *cuttʌ 'hammer'.
[Mat. 330].

{**SʌNʌ} 'year': IE *sen- 'year, old'; AA *x̌n 'year'.
[Mat. 337].

{**Sʌ/p/ʌ} 'sleep': IE *suep-/*sup-; AA *x̌p(w).
[Mat. 367].

?{**/x̌/elʌ} 'move': IE *sel- 'jump, move'; Drav. *cel- 'go'; AA *śl- 'be set in motion'.
[Mat. 339].

{**x̌ʌλʌ} 'heart': Alt. *s/e/l(ä)mä; Ural. *x̌üδ́äm.
[Mat. 364].

**x̌ʌrpʌ (descriptive) 'eat/drink liquids': IE *serb(h)-/*srebh-; AA *śrp/*śrb.
[Mat. 354].

?**ta/H/jʌ 'male relative': IE *deHi̯-uê̯r 'husband's brother'; Alt. *tājy 'male relative on mother's side'.
[Mat. 361].

**ta/k̨/ʌ 'suitable, appropriate': IE *dek̆- 'correspond, suitable, appropriate'; Drav. *takk-/*takʌ- 'suit, correspond'; AA *tk̨n 'put in order'.
[Mat. 355].

**talʌ 'shake': IE *del- 'sway, rock'; Alt. *tala- 'wave, flutter'; AA *tl- 'rock, shake'.
[Mat. 369].

{**tarʌ} 'swallow': Drav. *tār- 'swallow, drink'; Kart. *tr- 'drink'.
[Mat. 335].

**täkʌ 'touch': IE *dĕ̆g-; Alt. *täg(ʌ)-; Drav. *takʌ-.
[Mat. 369].

**tängʌ 'full': Ural. *täŋe 'full, fill'; ?Drav. *taŋ- 'abound in'; AA *tmm 'full, whole'.
[Mat. 356].

**te/h/ʌ 'say': IE */d/eH- 'say'; Alt. *tē- 'say'; Kart. *txo- 'ask'.
[Mat. 365].

**tel(ḷ)ʌ 'long': IE *del(H)- 'long'; Alt. */t/elʌ 'extended, wide'; ?AA *tlḷ 'long'.
[Mat. 339].

**te/l′/ʌ 'split, splinter': IE *del- 'split, splinter, rough-hew'; Alt. *tel′- 'break up'; ?Kart. *tal-/*tl- 'cut, hew, plane'; ?AA *tl- 'drill'.
[Mat. 360].

**ter(H)ʌ 'tear': IE *der(H)- 'tear, burst'; Drav. *te̲r- 'tear, burst'; ?Kart. *txar- 'dig'.
[Mat. 360].

**tikʌ 'horror': IE *tieg^{u}- 'step back in fear'; Drav. *tikʌl 'horror, numbness'.
[Mat. 370].

**to 'two': IE *du̯e- 'two, double'; ?Alt. */t/ö- 'two'; Ural. *to-ńće 'second'.
[Mat. 338].

**to/H/ʌ 'give': IE *deH^{u}-; Alt. */t/ā- 'give, receive'; Ural. *tōγe- 'give, bring'; Drav. *tā- 'give (to 1st and 2nd person)', stem of the imperative.
[Mat. 338].

?**tojʌ 'bend, incline': Alt. *taja- 'incline, to lean smthg.'; Ural. *tajʌ-/*toja- 'incline, bend'.
[Mat. 350].

{**t/o/kʌ} 'weave': IE *tek- 'weave'; Alt. *tokγ- 'weave'.
[Mat. 354].

**t/o/lgʌ 'worry, be upset': Alt. *talga/*tolgy- 'wave, be upset'; Drav. *tall- 'worry'.
[Cf. #62 **dalq/u/ 'wave'] [Mat. 334].

{**toLʌ} 'shoulder': Alt. *tālu 'shoulder, shoulder blade'; Drav. *tōl̥ 'shoulder, upperarm'.
[Mat. 355].

{**tul′ʌ} 'come, arrive': Alt. *tül′- 'enter, fall'; Ural. *tule- 'arrive, go down'; ?Drav. *tūl̥- 'leave, run away'.
[Mat. 357].

**turʌ 'pierce': Alt. *tür′ʌ- 'pierce, to thread'; Drav. *tūr̲- 'go through an opening'.
[Mat. 357].

**/t/urʌ 'full': Ural. *türe; Drav. *tūr.
[Mat. 356].

**tʌ/ḫ/ʌ 'pour': IE *deH- 'flow'; Kart. *tx(e)- 'spill, sprinkle'.
[Mat. 347].

**tʌlʌ 'deceive': IE *del- 'cleverness, perfidy'; AA *tll 'deceive'.
[Mat. 352].

**tʌpʌ 'cut off (plants)': Kart. *tip-/*tib- 'mow, hay'; AA *tb- 'cut off, straw'.
[Mat. 367].

?**ṭ/aj/lʌ 'stone, rock': Alt. *tᶜiāl′- 'rock, stone'; Kart. *ṭal- 'flint'.
[Mat. 343].

**ṭal/H/ʌ 'flat': IE *telH- 'flat'; Alt. *tᶜāla- 'flat, plain'.
[Mat. 355].

**ṭal(H)ʌ 'carry': IE *telH-/*tleH- 'carry, raise, tolerate'; Drav. *tāḻ- 'carry, tolerate'.
[Mat. 351].

**ṭangʌ 'pull' (see **ṭanʌ): IE *tengh-; Alt. *tᶜaŋʌ-.
[Mat. 370].

**ṭanʌ 'chop off': IE *ten-; Alt. *tᶜanu-.
[Mat. 352].

**ṭanʌ 'know': IE *tong-/*tenk- 'know, notice'; Alt. *tᶜany- 'know'; Ural. *tonʌ- 'know'.
[Mat. 343].

**ṭanʌ 'pull': IE *ten-, *tend-; Alt. *tᶜanu-; Drav. *tanṭ-.
[Mat. 370].

**ṭaŋʌ (descriptive) 'beat': IE *tep- 'beat, trample'; Alt. *tᶜapʌ- 'beat, hammer, trample'; Ural. *tappa- 'kick, trample'; Drav. *tapp- 'beat'; ?Kart. *ṭḳep-/ṭḳeb- 'trample'; AA *ṭp- 'beat, break, trample'.
[Cf. #349 **ṭapḥ<a> 'beat'] [Mat. 330].

**ṭaŋʌ 'feel, grope': IE *tep- 'smear, dip'; ?Alt. *tᶜapʌ 'dirty'; Ural. *tappa- 'feel, mould'; Drav. *tapp- 'feel, grope'; AA *ṭpl 'coat, to dirty'.
[Mat. 353].

**ṭaŋʌ 'hit (the target)': IE *top- 'reach a goal, guess'; Alt. *tᶜapa- 'hit target, find, guess'; Ural. *tap(p)ʌ- 'find, fitting, appropriate'; Drav. *tāpp- 'fitting, appropriate time'; AA */ṭ/p- 'located', 'be concerned about, watch over'.
[Mat. 356].

**ṭarʌ 'bald': Alt. *tᶜar′; Drav. *tar̲-.
[Mat. 347].

**ṭarʌ 'rub': IE *ter- 'rub'; Alt. *tᶜarʌ- 'scrape, scratch'; Drav. *tar̲- 'break off, reduce friction'; ?AA *ṭr(r) 'rub'.
[Mat. 368].

**ṭäjʌ 'louse': Alt. *tᶜi-; Ural. *täjʌ; Kart. *ṭil-.
[Mat. 335].

**ṭälʌ 'grow': IE *tel- 'young animal, plant'; Alt. *t/ä/l 'young (unweaned) animal'; Drav. *taḷ- 'sprout; young animals'; AA *ṭl- 'young animal'.
[Mat. 359].

**ṭäpʌ 'put, lay': Alt. *t^{ɛ}/ä/bʌ- 'stand, place, lay'; Drav. *tapp- 'put, lay'.
[Mat. 344].

**ṭ/ä/pʌ 'warm (oneself): IE *tep- 'warm (oneself)'; ?Alt. */t^{ç}ä/b(ʌ)- 'warm'; Kart. *ṭep-/*ṭeb- 'warm (oneself)'; ?AA *ṭpr/*dpr 'fire', *dp(1)- 'hot weather, sweat'.
[Mat. 338].

**ṭärʌ 'put into': Ural. *tärʌ- 'put into, to fit in'; Kart. *ṭi(r)- 'put into'; AA *?ṭr 'put into, fence'.
[Mat. 333].

**ṭ/e/mʌ 'feel, grope': Alt. *t^{ç}/e/mi- 'feel, grope'; Drav. *timʌ- 'smear, chafe skin'.
[Mat. 353].

**ṭijʌ 'narrow': Alt. *t^{ç}yja; Ural. *t/y/ja.
[Mat. 370].

**ṭil′ʌ 'swell': Alt. *t^{ç}il′i- 'swell'; Drav. *tiḷʌ- 'boil (over)'.
[Mat. 333].

**ṭinʌ 'strong': Alt. *t^{ç}inä-; Drav. *tiṇ.
[Mat. 364].

**ṭ/o/gʌ 'burn': IE *dheg^{ʷ}h- (prob. < *teg^{ʷ}h-) 'burn'; Alt. *t^{ç}/o/ga 'fire'; ?Ural. *tä/ɣ/ʌ(t) 'fire'; ?AA */ṭ/k^{ʷ}- 'flame'.
[Mat. 337].

{**ṭ/o/ḳʌ} 'pour': IE *tek^{ʷ}- 'flow, run'; Alt. *t^{ç}ök(ʌ)- 'pour'.
[Mat. 347].

**ṭubʌ 'deep': ?IE *dheub-/*dheup- (prob. < *teubh-) 'deep'; Alt. */t^{ɛ}/uba 'whirlpool'; Ural. *tuwʌ 'lake'; Drav. *tuvʌ- 'submerge'; Kart. *ṭ(u)ba 'deep, lake'.
[Mat. 336].

**ṭu/lɣ/ʌ 'jackal': Alt. *t^{ç}ülgä 'fox, wolf'; Drav. *tōḷ- 'jackal, wolf'; Kart. *ṭura 'jackal'; ?AA *t̲ʕl 'jackal, fox, wolf'.
[Mat. 372].

{**ṭUmPʌ} (descriptive) 'protruding': Alt. */t^{ç}/omp(ʌ)- 'protruding'; Ural. *tumpʌ 'protruding, hill'.
[Mat. 335].

**ṭumʌ 'dark': IE *tem(H)-; Ural. *tumʌ; AA *ṭwm.
[Mat. 368].

**ţungʌ 'butt (end of tree)': Alt. *tüŋ̣ʌ/*töŋ̣ʌ 'butt, stump'; Ural. *tüŋ̣e 'butt'.
[Mat. 344].

**ţunķʌ 'press': IE *tu̯enk- 'press'; Ural. *tuŋ̣kʌ- 'press, to stuff'.
[Mat. 338].

**ţupʌ (descriptive) 'spit': IE *pt(i̯)eu- (prob. < *tp(i̯)eu-); Alt. *tᶜupy- (w/irreg. reflexes); Drav. *tupp-; Kart. *ţʌb-; ?AA *t(w)p.
[Mat. 354].

**ţurʌ 'give birth to': IE *tuer- 'create, hold, have'; Alt. *tˋörä- 'give birth, create'.
[Mat. 361].

**ţurʌ 'fast': IE *tu̯er-; Alt. *tᶜür, *tᶜürgä-; Ural. *türke.
[Mat. 332].

**ţurʌ 'rotate, turn': IE tu̯er- 'rotate, turn'; Alt. *tᶜörʌ- 'surround, spin around'; AA *ţwr/*twr 'rotate, turn'.
[Mat. 333].

**ţurʌ '(fish) roe': Alt. *tᶜürʌ-; Ural. *türämä.
[Mat. 343].

**ţu/w/ʌ 'calm, peaceful': Alt. *tᶜüb; Ural. *tüwʌ-.
[Mat. 367].

?**ţülʌ 'burn (fuel): Alt. *tᶜülä- 'ignite fuel'; Kart. *ţwr-.
[Mat. 341].

**ţʌbʌ 'suitable, appropriate': IE *dhabh- (prob. < *tabh-) 'suitable, appropriate'; AA *ţjb, *ţwb 'good, fragrant'.
[Mat. 355].

**ţʌlķʌ 'push, pound': IE *telk- 'push, pound'; Drav. *taḷḷ- 'push, shove'; AA *ţlķ 'throw'.
[Mat. 369].

**ţʌrpʌ 'pleasure': IE *terp- 'sate, satisfy'; Kart. *ţrp- 'delight in, love'; AA *ţrp/*trp 'sate'.
[Mat. 370].

{**wESʌ} 'tire': Ural. *wä/s/ʌ-; Drav. *vēcʌ-.
[Mat. 370].

**wa/ć/ʌ 'abdomen': Ural. *waća; Drav. *vacʌ-.
[Mat. 341].

?**wa/ḫ/ʌ 'beat': IE *weH- 'beat, wound'; Alt. *uā- 'kill'; AA *wḫ- 'beat, tear out'.
[Mat. 330].

**wajʌ 'fall': Alt. *bajy- 'fall, roll'; Ural. *wajʌ- 'drown'.
[Mat. 353].

**waldʌ 'give birth to': Alt. *baldy- 'give birth, be born'; AA *wld 'give birth, be born'.
[Mat. 361].

**w/a/l′(ḳ)ʌ 'light (not dark)': ?IE *u̯lek- 'light'; Ural. *wal′ka/*wäl′ka 'white, light'; Drav. *veḷ 'white, light'.
[Mat. 363].

**wankʌ 'bend': IE *u̯eng- 'bent, crooked'; Ural. waŋka 'crooked'; Drav. *vāṅk- 'bend'.
[Mat. 336].

**warʌ 'burn': IE *uer-; Drav. *var- 'fry'.
[Mat. 341].

**warʌ 'side': Alt. *bar 'opposite side (of river)'; Ural. *warʌ 'side, edge'; Drav. *var- 'side, edge'; ?AA *br- 'side, country'.
[Mat. 367].

**watʌ 'speak, talk': Ural. *wa/t/ʌ 'word'; Drav. *vatʌ- 'babble, shout'.
[Mat. 336].

**wäkʌ 'strong': IE *u̯eǵ- 'strong, vigorous'; Ural. *wäke 'force, big'. [Mat. 364].

**wärʌ 'make': IE *u̯erǵ-/*u̯reǵ-; Ural. *wärʌ-; AA *wr-.
[Mat. 339].

**wärʌ (Cf. **wo/rH/ʌ) 'mountain': Ural. *wärä; Drav. *varʌ-.
[Mat. 337].

**wedʌ 'chop (w/weapons)': IE *u̯edh- 'prick, stab, chop (w/weapon)'; Drav. *veṭṭ- 'chop w/weapon'.
[Mat. 362].

**wegʌ 'carry': IE *u̯eǵh- 'carry, transport'; ?Alt. */e/gä- 'carry, drag'; Ural. *wēɣʌ-/*wīɣe- 'carry, transport'.
[Mat. 351].

**welʌ 'battle': IE *u̯el- 'bloodshed, to wound, kill'; Alt. *öl(ʌ)- 'die'; Ural. *w/e/lʌ- 'kill'; Drav. *vel- 'harm, kill'.
[Mat. 367].

**wetʌ 'lead': IE *u̯edh-/*u̯ed- 'lead, bring a wife'; ?Alt. *udʌ- 'follow s.o.'; Ural. *wetä- 'lead, pull'.
[Mat. 333].

**wetʌ 'water': IE *u̯ed- 'water'; Alt. *ödʌ- 'rain'; Ural. wete 'water'; Drav. *ōtʌ/*vetʌ 'moist, damp'; ?AA *wd- 'moist, damp, flow'.
[Mat. 334].

**w/e/ṭ∧ 'year': IE *u̯et- 'year, old'; Alt. *ötä- 'old'; ?AA *w/ṭ/- 'year'.
[Mat. 337].

{**wEC∧} 'throw': Ural. *wyćk∧-; Drav. *vīc-.
[Mat. 332].

**wi/H/r∧ 'male (of species)': IE *u̯īros; ?Alt. *ory; Ural. */wy/ra-; ?Kart. *xwir-; AA *w(H)r.
[Mat. 362].

**wiƛ/g/∧ 'desire': IE *u̯el(H′)- 'want, choose'; Alt. *yl∧- 'choose'; Ural. *vāð′∧- 'desire'; ?Drav. *vit∧- 'desire; heat (of animals); ?AA *wlg 'desire'.
[Mat. 340].

**wiɬ∧ 'damp, moist': IE *u̯elg-, *u̯elk-; ?Alt. *ōl; Ural. *wiɬ∧ '(birch) juice'; ?AA *wlḫ 'damp, moist, irrigate'.
[Mat. 333].

**wird∧ 'rear, raise': IE *u̯erdh- 'feed, raise, grow'; Ural. *wirtä- 'to rear, grow'.
[Mat. 335].

**wi/š/∧ 'grow': IE *u̯eis- 'grow'; Alt. *ü/s/i- 'grow'; ?Ural. *wyša 'green, green plants, vegetation'.
[Mat. 359].

**woγl∧ 'be': Alt. *bōl-/*ōl- 'be, become'; Ural. *wole- 'be'; ?Drav. *uḷ(ḷ)- 'be, be present'; AA *wʕl 'spend time, be'.
[Mat. 332].

**woj/H/∧ 'force, strength': IE *u̯eiH- 'force, to pursue'; Alt. *u(j) 'force'; Ural. *wōje 'be able, have the strength'.
[Mat. 364].

?**woj/ḳ/∧ 'straight': IE *u̯eik- 'fitting, appropriate, good'; Ural. *wojka 'straight, right'.
[Mat. 358].

**woj∧ 'sail, swim, float': Alt. *ojy-/*uj∧-; Ural. *woje-.
[Mat. 355].

**wo/lH/∧ 'point, (cutting) edge': Ural. *wōle- 'cut, hew'; Drav. *val∧- 'point, (cutting) edge'.
[Mat. 353].

**wol∧ 'big': IE *u̯el- 'big, many'; Alt. *ol∧- 'many, very'; Ural. *wola 'big'; Drav. *val/*vaḷ 'strong, big'; AA *wl- 'big'.
[Cf. #350 **wol⟨a⟩ 'big'] [Mat. 331].

**w/o/md∧ '(facial) hair': IE *u̯endh- 'facial growth'; Ural. *(w)umt∧ 'facial growth, fuzz'.
[Mat. 335].

**won/k/ʌ 'hole, opening': Alt. *oŋʌ/*uŋʌ 'hole, opening, hollow'; Ural. *woŋkʌ 'burrow, hole'; Drav. *vaṅk- 'hole, opening'. [Mat. 353].

**wo/rH/ʌ 'mountain': ?Alt. *bory; Ural. *wōre; Drav. *vōrʌ-. [Mat. 337].

**woţʌ 'take': Ural. *wotta- 'take, gather'; Drav. *ott- 'obtain'. [Cf. #351 **woţa 'obtain, overtake'] [Mat. 332].

**za/l/ʌ 'mucus': IE *sal- 'saliva, mud'; Alt. *ɣ́a/l/y- 'flow, saliva'; Drav. *caḷʌ 'mucus, slime, to rot'. [Mat. 365].

**zalʌ 'secret': Alt. *ɣ́aly- 'clever, crafty'; Ural. *sala 'secret'. [Mat. 368].

**zaṗʌ 'take': IE *sep- 'hold in hands, work on w/one's hands'; Alt. *ɣ́apa- 'take into hands, work on w/one's hands'. [Cf. #352 zaṗa 'take into hands, hold'] [Mat. 332].

**ze9ʌ 'eat': IE *seH- 'sated, full'; Alt. *ɣ́ē- 'eat'; Ural. *sē/ɣ/e- 'eat'; ?Kart. *ʒeɣ-/*ʒɣ- 'become sated'. [Mat. 340].

**z/e/wʌ 'left': IE *seuḭo-; Alt. *ɣ́/e/bʌ. [Mat. 346].

**zilʌ 'crawl': IE *(t)sel- 'crawl'; Alt. *ɣ́ylʌ- 'crawl, slide'; ?Kart. *zirţ- 'slide'; AA *z(ḫ)l- 'crawl, slide'. [Mat. 356].

**zolHʌ 'favor': IE *selH′- 'favor, good fortune, happiness'; Alt. *ɣ́ōl '(successful) journey, happiness'. [Cf. #347 **Sʌlʌ 'favorable'] [Mat. 330].

**zukʌ 'harvest': Alt. *ɣ́ügʌ 'grain harvest, sustenance'; Ural. *sükeśʌ 'fall'; Drav. *cu/k/ʌ- 'harvest, season of fruit gathering (spring)'. [Mat. 370].

**ʒirʌ 'see': Kart. *ʒir- 'see, find'; AA *zjr/*zrj 'see, know'. [Mat. 333].

**ɣ́iṗʌ (descriptive) 'pinch': IE *skeip- 'pinch'; Alt. *ɣ́ipʌ- 'pinch'; Ural. *ć́ippʌ- 'pinch, feel'. [Mat. 373].

?**ɣ́ʌḫʌ 'call': Kart. *ʒ(1)ax-; AA *d̲ḫj. [Mat. 342].

?**ɣ́ʌlʌ 'strong': Kart. *ʒ(1)al-/*ʒ(1)el-; AA *d̲lʕ. [Mat. 364].

**ɣonʧʌ 'biting insect': Ural. *ʧonʧʌ 'flea'; Kart. *ɣinʧwel- 'ant'; ?AA */d̲/n/ṣ/ 'fly'.
[Mat. 350].

?**ɣʌɣʌ 'seize': Kart. *m-ʒ(1)iɣ- 'fist'; AA *d̲ʕt̲ 'seize, handful, fist'.
[Mat. 371].

**ɣʌrʌ 'spread, diffuse,': IE *ster(H)- 'spread, diffuse'; AA *d̲r- 'to strew, scatter'.
[Mat. 359].

{**ʒada} 'spread out': Alt. *ɣada- 'spread out, flat'; Drav. *caṭṭʌ 'even, flat'.
[Mat. 359].

{**???} 'blood': Ural. *were; AA *br.
[Mat. 345].

?{**???} 'grow': IE *Herdh- 'grow, tall'; Kart. *zard-/*zrd- 'grow'; AA *rd- 'grow, increase (in size)'.
[Mat. 359].

Tables of Correspondences

Stops

*ṗ > IE p, sp-; Alt. p^{c}-,-p-; Ural. p-,-pp-; Drav. p-,-pp-/-v-; Kart. ṗ, p; AA p.
*p > IE p, b; Alt. p^{c}-/b-, -p-/-b-; Ural. p-,-p-; Drav. p-,-pp-/-v-; Kart. p/b; AA p(1)/b.
*b > IE bh; Alt. b; Ural. p-,-w-; Drav. p-,-v-; Kart. b; AA b.
*ṭ > IE t; Alt. t^{c}-,-t-; Ural. t-,-tt-; Drav. t-,-t(t)-/-ṭ(ṭ)-; Kart. ṭ; AA ṭ.
*t > IE d; Alt. t-,-d-; Ural. t-,-t-; Drav. t-,-t(t)-/-ṭ(ṭ)-; Kart. t; AA t.
*d > IE dh; Alt. d; Ural. t-,-δ-; Drav. t-,-t(t)-(?)/-ṭ(ṭ)-; Kart. d; AA d.
*ḳ > IE k, ḱ, $k^{\breve{}}$; Alt. k^{c}-,-k-; Ural. k-,-kk-; Drav. k-,-kk-/-k-; Kart. ḳ, ḳw; AA ḳ, $ḳ^{\breve{}}$.
*k IE g, ǵ, $g^{\breve{}}$; Alt. k-,-g-; Ural. k-,-k-; Drav. k-,-kk-/-k-; Kart. k, kw; AA k, $k^{\breve{}}$.
*g > IE gh, ǵh, $g^{\breve{}}$h; Alt. g; Ural. k-,-:γ-; Drav. k-,-:Ø-; Kart. g, gw; AA g, $g^{\breve{}}$.
*q > IE k, ḱ, $k^{\breve{}}$; Alt. k^{c}-,-k-; Ural. k-,-?-; Drav. k-,-?-; Kart. q, qw; AA ḳ, $ḳ^{\breve{}}$.
*q > IE H, $H^{\breve{}}$, (? H´); Alt. Ø-,-:Ø-; Ural. Ø-,-:γ-; Drav. Ø-,-:Ø-; Kart. q, qw; AA h̲.
*9 IE H, $H^{\breve{}}$, (? H´); Alt. Ø-,-:Ø-; Ural. ?-,-:γ-; Drav. Ø-,-:Ø-; Kart. γ, γw; AA ɡ.

Laryngeals

*ḥ > IE H, H´, (? $H^{\breve{}}$); Alt. Ø-,-:Ø-; Kart. x; AA ḥ; [? Ural., Drav.].
*h IE H (? H´,$H^{\breve{}}$); Alt. Ø-,-:Ø-; Ural. Ø-,-?-; Drav. Ø-,-?-; AA h; [? Kart.].
*γ IE H (? H´,$H^{\breve{}}$); Alt. Ø-,-:Ø-; Ural. ?-,-:Ø-; Drav. Ø-,-:Ø-; Kart. γ, ? Ø; AA ʕ.

Spirants

*s IE s; Alt. s; Ural. s; Drav. c; Kart. s(1); AA $š^{\breve{}}$.
*ś IE s; Alt. s; Ural. ś; Drav. c; Kart. s; AA $š^{\breve{}}$.
*z IE s; Alt. $ž^{\breve{}}$; Ural. s; Kart. z; AA z; [? Drav.].
*$š^{\breve{}}$ IE s; Alt. s,-$š^{\breve{}}$-†; Ural. s; Drav. c; Kart. s(1); AA $š^{\breve{}}$.
*š (?) > IE s; Alt. s; Ural. $š^{\breve{}}$; AA ś; [? Drav., Kart.].

† Note: Alt. *-$š^{\breve{}}$- Chuvash -ś-, other Turk. lang. -$š^{\breve{}}$-, Mong. -s-.

Affricates

*ç > IE (s)ḱ- (?(s)k), -s-; Alt. ǰ; Ural. ś (?); Kart. ç; AA. ṣ; [? Drav.].
*c > IE (s)k- (?(s)ḱ-),-?-; Alt. ǰ; Ural. ś; Drav. c; Kart. c; AA s.
*ʒ > Alt. ɣ; Ural. ś; Kart. ʒ; AA z; [? IE; Drav.].
*ć > IE ?-,-s-; Alt. ǰ; Ural. ć; Drav. c; Kart. c(1); AA ś.
*ʑ (?) > Alt. ɣ; Kart. ʒ(1); AA d̲; [? IE, Ural., Drav.].
*ǰ > IE (s)t-,-s-; Alt. ǰ; Kart. ǰ; AA t̲; [? Ural., Drav.].
*č > IE (s)t-,-s-; Alt. ǰ; Ural. č; Drav. c; Kart. ǰ; AA t̲.
*ɣ > IE (s)t-,-?-; Ural. ǰ; Kart. ɣ; AA d̲; [? Alt., Drav.].

Sonorants

*m > IE m; Alt. m-, b-, -m-; Ural. m; Drav. m; Kart. m; AA m, b (?).
*n > IE n; Alt. n; Ural. n; Drav. n-,-n̲-,-n-,-ṇ-; Kart. n; AA n.
*ń > IE n, j; Alt. ń; Ural. ń; Drav. ñ-, n-, -ṇ-; Kart. n; AA n.
*ñ (?) > IE kn-,-?-; Alt. n, ń; Ural. ñ; [? Drav., Kart., AA].
*r > IE r; Alt. ?-,-r-,-r´-; Ural. r; Drav. ?-,-r-,-r̤-,-r̲-; Kart. r; AA r.
*l > IE l; Alt. l- ,-l-,-l´-; Ural. l; Drav. n-,-l-,-l̤-; Kart. l, r; AA l.
*l´ > IE l; Alt. ?-,-l´-; Ural. l´; Drav. ?-,-l̤-; Kart. r; AA l.
*ɬ > IE l; Alt. t-,-l-; Ural. ɬ; Drav. t-,-l-/-l̤-; Kart. dl-(?),-l-; AA l.
*ƛ > IE l; Alt. d-,-l-; Ural. δ´; Drav. ?-,-ṭ(ṭ)-/-t(t)-; Kart. l; AA l.
*w > IE w; Alt. b, ø; Ural. w; Drav. v; Kart. w, ø; AA w, ? b.
*j > IE j; Alt. j; Ural. j; Drav. j-, ø-, -:ø-; Kart. j, ø; AA j, ø.

Note: Alt. *l- > Tung. l-, Mong. (Mongor, Dagur) l-,n-, (in other lang.) n-, Turk. j-.

Vowels

*a > Alt. a; Ural. a; Drav. a.
*o > Alt. o,(a); Ural. o,(a); Drav. o,a.
*u > Alt. u/ü,ö; Ural. u/ü; Drav. u.
*ä > Alt. ä,ö; Ural. ä; Drav. a.
*e > Alt. e,ö; Ural. e; Drav. e,i.
*i > Alt. i/y; Ural. i/y, a(?); Drav. i.

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